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MEMORANDUM OF THE CHAIRMAN

To Members of the Senate Committee on Energy and Natural Resources:

The Congressional Research Service has prepared this report of the legislative activities of the 96th Congress regarding energy matters. The information contained therein will assist us as we continue to meet our oversight responsibilities for Federal energy programs and move ahead in the development of new legislative approaches for energy issues facing our society.

JAMES A. MCCLURE, *Chairman.*

LETTER OF TRANSMITTAL

CONGRESSIONAL RESEARCH SERVICE,
THE LIBRARY OF CONGRESS,
Washington, D.C., May 14, 1982.

Hon. JAMES A. MCCLURE,
Chairman, Committee on Energy and Natural Resources,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: I am pleased to transmit to you the fifth in a series of reports, prepared for your Committee by the Environment and Natural Resources Policy Division of the Congressional Research Service, on the legislative activities of the Congress in energy policy. The current report, "Energy Initiatives of the 96th Congress," covers the period of the crisis in Iran and the second U.S. oil emergency in less than a decade. I believe it presents a useful summary and analysis of the Congressional response to those critical events.

The report is divided into 7 chapters. After a brief summary, the major energy legislation of the 96th Congress, including the Energy Security Act, the Windfall Profits Tax, and the Emergency Energy Conservation Act, are discussed in Chapter II. In subsequent chapters, legislative initiatives affecting fossil fuels energy, nuclear power, solar and other renewable energy, conservation and energy organization are treated.

Contributors to the report include Susan Abbasi, Robert Bamberger, Carl Behrens, William Hymes, Lawrence Kumins, David Lindahl, Gary Pagliano, Larry Parker, Duane Thompson and Robert Trumbule of the Environment and Natural Resources Policy Division; Robert Civiak, John Justus, Barbara Luxenberg, J. Glen Moore, Paul Rothberg, Migdon Segal and Marcia Smith of the Science Policy Research Division; Warren Donnelly, Senior Specialist in Conservation and Energy, and Thomas Buckmeyer and Christine DeMoncada of the Senior Specialists Division, and Bernard Gelb and Jeffrey Brown of the Economics Division. The report was edited and coordinated by Carl Behrens.

I hope this review of energy activities will be useful to the Committee and the Congress as it deals with the continuing and evolving issues affecting America's energy future.

Sincerely,

GILBERT GUDE, *Director.*

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CHAPTER I: THE 96TH CONGRESS: ENERGY CRISIS AGAIN*

Background

When, after two years of intense struggle and compromise, the package of legislative initiatives known collectively as the National Energy Act was passed by the 95th Congress, there was a widespread feeling that the framework had been laid to deal with the energy problem. There were still issues to be resolved, and some lingering doubts about the efficacy of some of the compromises, but the main ingredients of the energy economy had been addressed. The various components of the Act legislated policy for a broad spectrum of energy problems--natural gas pricing, conservation initiatives, regulation of utilities, encouragement of coal use. A bill creating a separate Department of Energy had passed with little controversy early in the Congress. Measures to deal with energy emergencies were already on the books from previous Congresses.

This comprehensive activity was particularly impressive because it took place in the absence of an emergency. The urgency had temporarily gone out of the energy problem. As the debate proceeded on how best to reduce dependence on foreign oil, the real price of that oil was declining, giving rise to the expectation that the crisis had been weathered and the crunch was over. Nevertheless, the President believed that energy policy was of central importance to the Nation, and the Administration pushed hard to get an energy package through the Congress. The initiative came largely from the White House; the Congress responded with proposals of its own--radically different in some cases, but still in reaction to the Administration's lead.

In fact, it was on the urgency of the energy problem that the Congress and the President disagreed. The Administration's plan was based on the conclusion that world oil demand would outrun supply by 1985, and that "catastrophe" would result unless measures were taken to change consumption patterns. Prominent among the plan's provisions were a standby tax on gasoline, to be imposed if consumption goals were exceeded, and a "crude oil equalization tax" on every use of oil except residential home heating. The Congress, arguing both that the proposed program would not achieve the President's 1985 goal, and that the urgency to achieve it was not there, refused to enact either tax. By the end of the 95th Congress, numerous energy assessments concluded that world oil supplies would be plentiful and prices would would remain stable through 1985, and possibly through the year 2000. 1/ It was on this premise that much of the energy legislation of the 95th Congress--the Natural Gas Policy Act, for example--was based.

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* By Carl E. Behrens, Environment and Natural Resources Policy Division

Energy and the 96th Congress

Events soon showed that the President was right in predicting catastrophe; but it happened not in 1985 but in 1979, too soon for any of his proposed programs to have taken effect, even if they had been enacted. Gas lines reappeared in the Spring, following the crisis in Iran; the tight supply market allowed OPEC to raise its prices in a mad reprise of the 1973-74 run-up. The Congress, no longer taking a lead from the President, developed its own initiatives, born of crisis and forged in the same sense of urgency that had reigned earlier.

Major Legislation

Central to the 96th Congress's energy efforts was a conglomerate piece of legislation called the Energy Security Act (P.L. 96-294). It started out as an expression of Congressional enthusiasm for synthetic fuels--which the Administration shared--and added provisions on renewable energy and conservation, on acid precipitation and on the strategic petroleum reserve.

An important Administration goal was a "windfall profits" tax on oil, to accompany the price deregulation that President Carter was already authorized to start. The Congress passed a version of the windfall tax, and it also passed an Alaska Lands Act (P.L. 96-487), dealing in large part with development of oil and gas on Federal lands in that state.

Budget Bills

The Congress generally went along with the Administration's budget proposals for increased fossil and renewable energy and conservation R&D. But it refused to accept Carter's wish to end the Clinch River Breeder Reactor demonstration project, and the impasse resulted in no authorization bill for the Department of Energy's civilian programs for either FY80 or FY81. The Congress also voted a fusion development bill to accelerate that program, and almost agreed to a bill to expedite the nuclear waste management program.

1/ U.S. Senate. Committee on Energy and Natural Resources. Energy initiatives of the 95th Congress. Committee print (96-10). Washington: U.S. Govt. Print. Off. May 1979. p. 35.

Administration Defeats

While Congress and the Administration agreed on major legislation in the area of synfuels and the windfall profits tax, there were major disagreements on other policies. The Department of Energy's standby emergency and rationing plan was rejected once; a revision was adopted in the end only because of a feeling that some plan should be on the books. Even worse mauling came on the issue of imposing an import fee on oil, to be applied as a 10-cent tax on gasoline: although the President claimed he had authority to impose it, the Congress went out of its way to pass a resolution rejecting the plan. This defeat was quickly followed by another: an Administration proposal creating an "Energy Mobilization Board" to cut red tape blocking nonnuclear energy projects, after passing both House and Senate, was turned back when the House refused to accept a hardfought Conference Committee compromise.

On other issues, an ambitious plan to make grants to electric utilities for reducing oil and gas consumption passed the Senate, but didn't get out of committee in the House. An effort to coordinate the various State and local energy plans into a single system, in the Energy Management Partnership Act, foundered on the issue of conservation versus increasing energy production.

Congressional Initiatives

In addition to the synfuels legislation, which started in the Congress, and the other components of the Energy Security Act, a number of other initiatives originating on Capitol Hill won passage during the 96th Congress. The FY80 authorization bill for the Nuclear Regulatory Commission contained a number of licensing revisions developed in response to the accident at Three Mile Island. The Congress also struggled long and hard to produce a regional energy bill, the Pacific Northwest Electric Power Planning and Conservation Act of 1980 (P.L. 96-501), designed to distribute equitably the large but finite Federal hydropower resources of the region.

Prospects and Pending Actions

As the 97th Congress began, with a new Administration and a party change in the Senate, many energy issues remained unresolved. The energy situation in the 1970s had gone from crisis to recovery to calm to crisis. Thousands of pages of new energy legislation, much of it short-term, had been enacted. The Nation had learned again that energy, particularly oil, was central to the economy; it had also found that those Federal initiatives that had been enacted to deal with energy problems were not very effective. New directions seemed clearly indicated.

CHAPTER II. MAJOR LEGISLATIVE ACTIONS

The Energy Security Act of 1980 (P.L. 96-294)*

A bill which began as a relatively small Federal commitment to the synfuels industry ended as the central rallying point for a comprehensive Congressional and Executive Branch effort to spur domestic energy production and conservation, and reduce dependence on foreign oil imports. The original bill (H.R. 3930), introduced as an amendment to the Defense Production Act of 1950 (P.L. 81-774) authorized $3 billion in Federal economic incentives including Federal loans and loan guarantees, and price guarantees, that could be made to private companies engaged in synfuels production. As a result of new energy initiatives by the Carter Administration and the Congress during 1979, the bill was expanded to become one of the major energy bills in the 96th Congress.

When passed in June 1980 (with the Senate number, S. 932), the bill contained numerous programs which could cost between $20 billion and $25 billion, and included another $68 billion in 1984, with Congressional endorsement of a future plan of the newly-created U.S. Synthetic Fuels Corporation. Among the major elements of the bill are the following:

- o Establishes the U.S. Synthetic Fuels Corporation with an authorization of $20 billion to promote the production by private industry of synthetic fuels, such as liquids and gas from coal or oil from shale.

- o Subsidizes, through the Energy and Agriculture departments, $1.45 billion to encourage production of fuels such as alcohol and methane from agricultural crops or residue and from urban waste.

- o Establishes a Solar Energy and Conservation Bank in the Department of Housing and

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*By Gary J. Pagliano, Environment and Natural Resources Policy Division.

Urban Development. The bank could subsidize loans to persons who installed solar or energy-saving equipment. Loans for solar equipment would be available even to those in high-income households. Tenants also could get aid for conservation improvements, and lower income persons could get grants. Authorized was $2.5 billion for conservation, and $525 million for solar energy.

o Directs the President to fill the Strategic Petroleum Reserve (SPR) at a rate averaging at least 100,000 barrels a day.

Most funding for the synfuels program was provided by the Congress in the 1979 Department of Interior-Energy appropriations bill (P.L. 96-126), which set up a $19 billion fund for synthetic fuels and a $1 billion reserve for Solar and Conservation programs.

What follows is a more detailed discussion of the Energy Security Act, why new issues were introduced to the bill, what they were, how they changed in the legislative process, and what the resulting energy policy implications were.

TITLE I: THE SYNFUELS CORPORATIONS

Background*

Synthetic fuels processes, especially coal gasification processes, have been used in the marketplace for a number of years. Coal gas plants to supply gas for lighting and industrial purposes have existed since the 19th century, and it is estimated that there were 11,000 coal gas producers in the United States in the 1920s, many of them in the steel industry. However, with the development of a national natural gas distribution system after World War II, coal gas markets disappeared.

With the exception of some interest and experimental production during World War II, 1/ synthetic fuels' potential as a significant contributor to the country's energy mix did not appear close to realization until the early 1970s. Until then, oil was plentiful and natural gas distribution systems expanding. For example, the Arab oil embargo of 1967 had no effect on U.S. oil supply; domestic producers merely increased production to cover the shortfall. However, by 1973, this situation had changed. Imports had risen to one-third of U.S. oil consumption; U.S. oil production had peaked. The impact of this embargo was vastly different from the one in 1967.

The 1973 oil embargo and the run-up of prices stimulated Congressional action on synthetic fuels. In 1974, the Congress passed the Federal Non-Nuclear Energy Research and Development Act (P.L. 93-577) authorizing the Energy Research and Development Administration (now incorporated into DOE) to help develop alternative energy technologies, including coal gasification and liquefaction, and oil shale retorting processes. Under the legislation the Department of Energy may guarantee product price, make purchase agreements, and establish Federal corporations or contract for government-owned and contractor-operated (GOCO) facilities.

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* By Larry B. Parker, Environment and Natural Resources Policy Division

1/ This interest was reflected in the Synthetic Liquid Fuels Act of 1944 (P.L. 78-290), designed to help build synfuel demonstration plants for coal, oil shale and other substances. In that year, Senator Joseph C. O'Mahoney, Chairman of the Senate Committee on Interior and Insular Affairs, wrote:

> There will be plenty of gasoline...but only if the United States rapidly expands its program for the production of synthetic fuels. Without such (continued) a program we shall become an importer of petroleum and thus dependent upon other lands and other peoples for the fuel supply we must have to maintain the commercial and industrial leadership which America now enjoys.

In 1975, the Ford Administration proposed a $100 billion plan to achieve energy independence by 1985. The plan, originally suggested by Vice President Nelson Rockefeller, called for the creation of an Energy Independence Authority: a government corporation with authority to provide financial assistance to projects that would help gain energy independence for the United States. To the extent practicable, the form of the encouragement was to be loans for loan guarantees to private business concerns. Also, the legislation was designed to expedite government regulatory procedures that affected energy development.

The Energy Independence Authority did not pass, and with some recovery from the shock of the oil embargo, interest in massive synthetic fuel development waned. President Carter's 1977 National Energy Plan mentioned government activity in synthetic fuels only in terms of an active R and D effort. However, the 1979 Iran crisis and its resulting gas lines, as well as the general heightening of tensions in the Middle East, renewed interest in synthetic fuels and was one of the catalysts for the legislation discussed below.

Synfuels Look for a Home--The Legislative Process*

House Action. The vehicle for expanding U.S. efforts in synthetic fuels was renewal of the Defense Production Act of 1950, designed to prepare the country's industrial base for mobilization in the event of war. In January 1979, two bills were introduced in the House to extend the DPA. One bill, H.R. 37, simply extended existing law for two years. The other, H.R. 602, would have allowed purchases of, or commitments to purchase, synthetic fuels for government use, and encouraged development and production of such fuels. This authority would be effective until June 30, 1990; total obligatory authority under the provision was $2 billion.

Both bills were referred to the Subcommittee on Economic Stabilization of the House Committee on Banking, Finance and Urban Affairs. After five days of hearings, the subcommittee, chaired by H.R. 602 author William Moorehead, reported a clean bill, H.R. 3930, to the full committee on May 3, 1979. The full committee reported H.R. 3930 to the House with amendment on May 8.

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*By Larry B. Parker, Environment and Natural Resources Policy Division

As reported by the full committee, H.R. 3930 extended the Defense Production Act for one year and provided authority for a joint Government-private effort to produce synthetic fuels and synthetic chemical feedstocks for national defense purposes. The bill directed the President to achieve a national goal of 500,000 barrels of oil equivalent a day of synthetic fuels by 1985--the current military demand. The bill authorized $2 billion dollars to be used in paying the difference between the contract price for the synthetic fuel and the market price. The bill did not specify particular technologies to be employed, or call for an independent synthetic fuels corporation.

Debate on the House floor revolved on three issues: (1) grants of power to the President under the bill, (2) the proper government role in synthetic fuels and energy development, and, (3) the potential costs to the Federal government of the bill.

H.R. 3930 did not set up any new organizational structure, but granted power to the President, subject to one-house veto in some cases, to organize corporations and make loan guarantees. Proponents of the bill felt the one-house veto was sufficient protection against abuse.

The proposal to subsidize private corporations and allow creation of government energy corporations brought up questions on the proper role of government in energy policy. Rather than having the government assume more of the risk of energy independence, some Congressmen advocated a reduction in government involvement. Proponents of the bill, however, argued that the urgency of the situation and the private sector's general unwillingness to accept the risks of synthetic fuels development made government intervention necessary.

A third area of discussion concerned the potential costs of the program. Proponents of the bill believed that with the rising price of imported oil, the guarantee prices provided by the bill would cost the government nothing--the price of synthetic fuel would be less than world prices. Opponents of the bill argued that the loans and price guarantees masked the true costs of the program since there would be no immediate budgetary expense. Also, they noted that defaults on such loan guarantees could add billions to the cost of the bill given the expensive nature of synthetic fuel facilities. The House decided in favor of the bill with some amendments. In particular, the House increased the goal of the bill to 2 million barrels a day of synfuels by 1990. The bill was passed as an amendment to S. 932, which originally provided for a simple renewal of the DPA. The vote, on June 26, was 368 to 24.

Senate Action and Administration Proposal. The Senate assigned the House version of S. 932 to the Banking, Housing and Urban Affairs Committee, and the Energy and Natural Resources Committee. Each committee held hearings on the bill and reported separate substitutes for the House bill to the whole Senate.

In July, during Senate deliberations on the issue, the Administration announced it would transmit draft legislation to establish an Energy Security Corporation, analogous to TVA, Amtrak, or the Federal Reserve System. Seven board members would manage the Corporation: a chairman and three other outside directors would be appointed by the President and confirmed by the Senate, and the Secretaries of Energy and Treasury and one other department. The officers and staff of the Corporation itself would be exempt from a number of rules that normally apply to government agencies.

The Corporation's purpose would be to produce 2.5 million barrels a day of substitutes for imported oil by 1990. Funds for the Corporation would come out of the President's proposed windfall profits tax. The Corporation's exclusive objective would be to develop domestic production capability; it would not engage in research and development. The corporation could invest in, or develop directly, the production of coal liquids, coal gases, peat, biomass, shale oil, and unconventional natural gas.

The ESC would use price guarantees, federal purchase agreements, direct loans, loan guarantees, and a limited number of government-owned and operated (GOGO) or government-owned, contractor operated (GOCO) plants. It would not have authority to participate in joint ventures or other forms of equity ownership. It would sell small denomination Energy Bonds which would bear the same interest rate as U.S. Savings Bonds.

Banking Committee Version. In deliberating on S. 932, the Banking Committee considered four barriers to a "crash" commercialization program as suggested by the President: (1) technological uncertainties, (2) high costs, (3) capacity problems, and (4) environmental and socioeconomic impacts. It concluded (1) that initial synthetic fuel efforts should be confined to a few one-of-a-kind plants, and then followed with wider commercialization, if feasible, and, (2) government interference with such an effort should be minimized. The committee, therefore, decided on a phased approach, the purpose of which would be to gather the necessary information for a decision on fullscale commercialization. Such an approach would limit the risk to the government.

The Committee rejected the idea of an "Energy Security Corporation." Among the reasons given by the Committee were the following:

> 1. Creating a Federal corporation for the sole purpose of managing a synthetic fuels

> program is inconsistent with the Committee's intent to minimize federal interference with and involvement in synthetic fuels development efforts;
> 2. Creating the Corporation is inconsistent with the phased-development approach approved by the Committee;
> 3. Initial and irreversible authorization of $88 billion for Federal financial assistance is excessive and further promotes a high degree of federal interference in the program; and
> 4. The time needed to create a new federal corporation would be likely to delay initiation of the first phase of commercial testing. 2/

Rather, the committee left the President with the power to organize the synthetic fuel effort within the current bureaucratic structure of the Federal Government. Authorization for the program was $3 billion.

Senate Energy Committee Version. The Energy Committee proposed a synfuels program between the President's crash program and the Banking Committee's phased approach. The purpose of the Energy Committee's version of S. 932 would be to develop a 1.5-million-barrel-a-day synthetic fuel capacity by 1995, under a two-phased commercialization program. Phase I would authorize $20 billion to test different processes and technologies. Based on the knowledge gained during Phase I, Phase II would allocate a maximum of $68 billion to achieve the national goal by 1995.

To implement this plan, the legislation called for a U.S. Synthetic Fuels Corporation. Federally owned, but independent of DOE, the Corporation would foster commercial production by private industry through purchase agreements, price and loan guarantees, loans, and joint ventures. Also, under certain circumstances, GOCO's were allowed during phase I. The Corporation would terminate on September 30, 1995.

The Energy Committee felt that the task presented by the rapid development of synthetic fuels required a new financing institution. It was felt that a separate corporation would provide the evidence of financial capacity, decision-making flexibility, and continuity of purpose necessary to make the synthetic fuel effort successful.

2/ U.S. Congress. Senate. Committee on Banking, Housing and Urban Affairs. "Extending the Defense Production Act of 1950, As Amended," Senate Report 96-387. Washington, U.S. Govt. Print. Off. Oct. 15, 1979, p. 31.

Debate on the Senate floor between the proponents of the Banking Committee's proposal and those of the Energy Committee's proposal revolved around five issues: (1) need for a synthetic fuel corporation, (2) rate of synthetic fuel development, (3) phase-in of funding, (4) government owned, contractor operated facilities (GOCO's), and (5) government's role in synfuels development. The tenor of the Senate debate on synthetic fuel development was different from that of the House. Rather than debating whether the government should be involved in synthetic fuel development at all, the discussion tended to focus on how much and at what pace the government should act.

Proponents of the Energy Committee's version of the bill argued for a fresh approach to synthetic fuels and against the "business as usual" approach, as they saw it, of the Banking Committee. They pointed to the failure of DOE to build a commercial synthetic fuels plant despite the 1974 Non-Nuclear Research and Development Act, as evidence of the need for a separate mission-oriented government corporation. Defending the need for an $88 billion program, proponents of the Energy Committee's bill pointed to the large amount of money currently going to OPEC, and argued that a synthetic fuels effort was one from which the taxpayers should get most of their money back.

Proponents of the Banking Committee's version argued that synthetic fuels were too risky for an $88 billion commitment; a cautious approach was more appropriate. They also attacked the addition of more energy bureaucracy to the Federal government when they felt it was unnecessary.

The Senate voted down the Banking Committee proposal and adopted, with amendment, the Energy Committee's version. The House would not accept the Senate changes in S. 932 and a conference was called.

Conference Report. On March 11, 1980, the House and Senate reached tentative agreement on Title I of S. 932. Faced with two diametrically opposed philosophies on synthetic fuels development, the conference combined the two of them. Essentially, the conference agreed to two synthetic fuel programs, although one of them was supposed to be relatively short-lived.

Besides agreeing on the two-phase Senate synfuel effort, the conference retained the House sponsored plan as an "interim" program for the period between the passage of the Act and the time when the Synthetic Fuels Corporation was fully functional. The authorization level was set at $3 billion. Also, at the insistence of the House conferees, once the U.S. Synthetic Fuel Corporation was operational, such powers would convert to a standby basis in case of emergency.

Other compromises on Title I include:

1. In response to strong House pressure to retain vigilant congressional oversight of the program, the conference committee stated a preference for authorizing money for Phase II in increments. This would remove them from the year-by-year authorization process.

2. To assist smaller energy companies, the committee dropped Senate language allowing loan guarantees only as a last resort.

3. After long debate, the committee allowed the Corporation to fund up to 60 percent of a joint venture. Private sponsors could not seek loan guarantees on their share of the financing of such joint projects.

4. The committee agreed to the creation of up to three GOCO's as a last resort.

5. The conference accepted a Senate amendment to allow two facilities to be built outside the U.S. but within the Western Hemisphere. Such a project would be subject to a one-house legislative veto.

Debate on the conference report was muted in both Houses, and the compromise bill was approved by large margins. The President signed it on June 30, 1980.

Legislation as Passed*

Title I, Part A. Development of Synfuels Under Amendments to the Defense Production Act of 1950. In creating SFC, Congress recognized that some indeterminate period of time would be required before SFC could become operational. Given this lead time and the congressional mandate to expedite the production of synfuels for national defense purposes, P.L. 96-294 provided the President with several new authorities which are specified in the form of amendments to the Defense Production Act of 1950.

Before SFC became operational, the President was given the authority to offer (through the Department of Defense and other Federal agencies) purchase agreements, loans, and loan guarantees to stimulate synfuels development for national defense needs. Up to $3 billion, subject to appropriations, was made available for this purpose. Once SFC is established, these authorities will continue to exist only on a standby basis.

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*By Paul Rothberg, Science Policy Research Division.

"Standby" authorities that the President could use to expedite the production of synfuels include: (1) contracts for purchase or commitments to purchase synfuels for Government use for defense needs; (2) loan guarantees; (3) direct loans; (4) installation of additional equipment, facilities, processes, or improvements in Government-owned equipment in privately owned facilities; and (5) construction of Government-owned, contractor-operated synfuels projects.

As specified in P.L. 96-294, the President must make certain findings before he may invoke the "standby" authorities. Those findings are that (1) a national shortage of energy has resulted, or is likely to result, in a shortage of petroleum in the United States which is likely to threaten the adequacy of fuel supplies needed for the country's direct defense and direct defense industrial base programs; (2) the continued adequacy of needed supplies cannot be assured and requires expedited production of synfuels; (3) the SFC is unable to accomplish such expedited production in a timely manner; and (4) it is necessary to use the "standby" authorities, subject to transmitting to Congress a report setting forth these findings.

Title I, Part B: Creation of the U.S. Synthetic Fuels Corporation. Part B of Title I of P.L. 96-294 creates an independent, Federal entity called the United States Synthetic Fuels Corporation (SFC), which is authorized to provide several forms of financial assistance to foster the production of synfuels. SFC-supported projects will be designed to convert the Nation's coal, oil shale, peat, certain heavy oils, and tar sands resources into synfuels which can be used as substitutes for natural gas and petroleum (including crude oil, petroleum products, and chemical feedstocks). The SFC also was authorized to assist facilities used solely (1) to produce mixtures of coal and petroleum for direct fuel use, (2) for commercial production of hydrogen from water, and (3) for the commercial production of electricity by a magnetohydrodynamic (MHD) topping cycle.

The financial resources available to SFC over its 12-year lifetime are limited to a maximum of $88 billion. Congressional appropriations to finance SFC's operations are deposited in the Energy Security Reserve of the U.S. Treasury (which was established by the Department of the Interior and Related Agencies Appropriations Act, 1980, P.L. 96-126). The first installment of funding for SFC, $20 billion, was authorized as of June 30, 1980, subject to appropriations. The second and subsequent installments were to be authorized (up to a maximum of $68 billion) by joint congressional resolutions, subject to appropriations.

Administrative Structure of the Corporation. SFC's powers are vested in a seven-member Board of Directors, composed of a chairman and six other directors, to be appointed by the President and confirmed by the Senate. The chairman, who is responsible for SFC's management and direction, is appointed for a 7-year term and must serve on a full-time basis. The other six Directors may serve on a part-time basis. The Board will appoint SFC's officers (including a General Counsel and a Treasurer), define their duties, and fix their salaries. Up to 300 full-time professionals may work for SFC at any one time. The SFC is provided with an annual authorization, adjusted for inflation each year, of up to $35 million for administrative expenses and up to $10 million for contract studies.

P.L. 96-294 establishes a six-member Advisory Committee to review SFC's solicitations to fund synfuel projects. This committee, which offers guidance to SFC's Board, is composed of the Secretaries of Energy, Interior, Defense, and Treasury, the Chairman of the proposed Energy Mobilization Board (EMB),* and the Administrator of the EPA.

The President was to appoint an Inspector General for SFC, to conduct audits and inspections to ensure that SFC's programs comply with its organic act and are free of fraud and abuse. The Inspector General reports directly to SFC's Board. In annual reports over his 7-year term, SFC's Inspector General was to inform the Board and Congress of his findings and recommendations.

SFC's Goals and Comprehensive Strategy. In P.L. 96-294, Congress established a national goal of achieving a synthetic fuel production capability equivalent to at least 500,000 barrels per day by 1987, and 2.2 million barrels by 1990. While involving a variety of financial and industrial firms, SFC's initial activities were to be designed to increase industrial experience with a wide range of processes, methods, and technologies for commercially producing synfuels from domestic resources.

By June 30, 1984, SFC is required to develop and submit to the Congress a comprehensive strategy to achieve the national synfuels production goals. The comprehensive strategy includes reports on economic, technological, and environmental aspects of synfuels projects granted financial incentives from the SFC to that date, and SFC's longer-term objectives and its schedule to achieve them. The plan is to emphasize private sector responsibilities to commercialize synfuels projects and describe specific limitations to be placed on SFC's involvement in future projects. After consultation with the Secretary of Defense, SFC must consider the feasibility of meeting national defense fuel requirements using synfuels produced by SFC-assisted projects.

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*Legislation to create the EMB has thus far not been enacted into law.

P.L. 96-294 authorizes SFC to require appropriate security and collateral for the repayment of any obligations owed to it. All forms of financial assistance granted by SFC shall be general obligations of the United States backed by its full faith and credit.

A recipient of SFC's financial assistance must develop a plan to monitor a project's environmental and health-related emissions. The plan must be acceptable to SFC's Board of Directors and it must be developed in consultation with the Administrator of the EPA, the Secretary of Energy, and appropriate State agencies.

Under certain limited circumstances, SFC could acquire control of or purchase and lease back synfuels projects, subject to congressional review and veto. As specified in P.L. 96-294, such control would have to be disposed of within 5 years after acquisition.

Construction projects which primarily would be SFC-owned but privately constructed and operated are authorized for unique facilities only if, in the judgement of SFC's Board of Directors, the project is necessary to meet certain objectives of the Act, and only after no participant could otherwise be found who would accept one or more forms of financial assistance to construct such a facility. Up to three such projects could be authorized on such a last resort basis. No such projects would be authorized once the comprehensive strategy was approved by Congress.

Policy Implications Associated with Implementation of SFC's Mandate*

The SFC can be viewed as a new financial and institutional experiment in the public support of private synfuels projects. If successful, SFC's program would help the Nation decrease its dependence on foreign oil, thus contributing to the health of the national economy and to the maintenance of national security. A successful synfuels industry would also create many new jobs, improve the tax base of many communities, and permit environmentally clean fuels to be produced, distributed, and used in areas now experiencing difficulties in meeting clean air standards.

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*By Paul Rothberg, Science Policy Research Division.

Implementation of the National Synfuels Production Program, however, poses many challenges for Government, industry, interest groups, and the Nation as a whole. The commercialization of the new synfuels industry was expected to be a difficult and gradual process. Potential shortages of materials and manpower, uncertainties in Federal and State regulatory policies and practices, and a host of other constraints could adversely affect the implementation of SFC's program. Cooperation among Government organizations and industry and public interest groups, and a reduction of the conflicts involving various environmental resources, will increase the chances for a successful program.

Because of the large amount of Federal funds involved and because of the numerous constraints facing commercialization, congressional oversight of the Federal role in the National Synfuels Production Program (and especially of the SFC) was expected. A variety of economic and institutional issues surrounded the SFC. Important questions include: Is the SFC spending Federal funds appropriately? Is the SFC functioning as Congress intended? How could Federal agency participation in the National Synfuels Production Program be better coordinated?

Pending Actions*

A study for the Senate Budget Committee identified five major impediments which may inhibit the rate of synthetic fuel development. 3/ These are: (1) resources, (2) technical, (3) regulatory, (4) financial, and, (5) socio-economic. The Congress attempted to address the technical uncertainty of synthetic fuel development and the financial aspects of the development with Phase I and II of the Synthetic Fuels Corporation. Also, research and development programs under DOE were expected to continue. However, the other impediments mentioned above are not addressed by the Energy Security Act. These barriers (resources, regulatory, socioeconomic) to large scale development are discussed below along with possible congressional action to deal with them.

3/ Cameron Engineers. "Overview of Synthetic Fuels Potential to 1990." Prepared for Synthetic Fuels Task Force of the Senate Budget Committee. Synthetic Fuels, September 27, 1979 (committee print).

*By Larry B. Parker, Environment and Natural Resources Policy Division

Resources. Although in the physical sense there is sufficient of coal and oil shale to support a massive synthetic fuels effort, access to those resources by private developers is uncertain in some instances because of Federal Leasing policy. Eighty percent of U.S. oil shale and large portions of Western coal are federally owned. In 1974, the Department of Interior issued 4 leases under the Federal Prototype Oil Shale Leasing Program. The object of the program was to test the various environmental and socioeconomic impacts of different oil shale extraction and conservation processes. However, as noted by the House and Senate committees which have jurisdiction over oil shale leasing: "Development under the program has been minimal, providing supervisory experience and limited technical and environ mental information." 4/

Several impediments to oil shale leasing have been identified. These include the following:

1. Inability of the Secretary of Interior to allow surface use of additional lands not located within the actual lease. Oil shale leases are restricted to 5,120 acres. In some cases, additional surface area is necessary for spent shale disposal, overburden disposal, and construction of facilities.

2. Because oil shale extraction requires large amounts of land, leases for more than 5,120 acres may be necessary in some cases for commercial development.

3. Many other minerals, such as dawsonite, nahcolite and halite, are intermingled with oil shale. Yet the Secretary's right to issue multimineral leases is unclear.

4. Currently, oil shale leases are restricted to one lease per person. Changes to mitigate the above impediments would require amending the Mineral Leasing Act of 1920.

In the 96th Congress, bills (H.R. 7941 and S. 2858) were introduced to change the 1920 act to expand the Secretary's ability to deal with these impediments. H.R. 7941 passed the House and received a favorable recommendation from the Senate Energy and Natural Resources Committee. However, the 96th Congress adjourned before full Senate action could be taken. Because of the importance of oil

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4/ Senate Report 96-1023 and House Report 96-1316, "Amending Section 21 of the Act of February 25, 1920, commonly known as the Mineral Leasing Act."

shale leasing to the synthetic fuels effort, similar measures will probably be introduced in the 97th Congress.

Regulatory Problems. Perceiving the need to expedite the regulatory process regarding synthetic fuels, President Carter introduced the bill to create the Energy Mobilization Board along with the bill setting up the Energy Security Corporation. The purpose of the Energy Mobilization Board was to establish binding schedules for critical non-nuclear energy facilities which local, state, and federal authorities had to meet. Also, as proposed, the Board could have waived procedural and sometimes substantial requirements of federal, state and local laws to expedite the development of a critical facility.

As noted elsewhere in this report 5/ EMB's course through the legislative process was not pleasant, nor successful. Serious questions were raised on the extent and scope of the Board's power and possible interference with state prerogatives. However, the impediments to bringing a plant on-line remained. Besides the sheer number of permits needed for a facility, other factors complicate the process: (1) intergovernmental and intragovernmental disputes at various levels concerning necessary permits; (2) the issuing of conditional permits, which require the builders of facilities to submit potential changes in scheduling, construction, or operation to various agencies for approval; (3) use of public participation mechanisms as delaying tactics by opponents of a facility; and, (4) future regulatory uncertainty.

Socioeconomic Effects. Large scale synthetic fuel development will entail the influx of new people to the development area. Particularly in the sparsely populated West, such impacts will be massive, as stated by Governor Lamm of Colorado:

> A single 50,000 barrel per day surface retorting plant and associated underground mine would be one of the largest mining operations in the United States and would, itself, be the largest industrial complex in the history of the State of Colorado. Yet the President is proposing the construction of eight such large plants, most of which would be located in Colorado, with a total capacity of 400,000 barrels per day. 6/

5/ See Chapter VII for a more detailed discussion of the Energy Mobilization Board proposal.

6/ Senate Report No. 96-387, op. cit., p. 17.

According to Governor Lamm, such development could add about 90,000 people to an area in which 14,500 people currently live. Population increases of this magnitude would present several problems. The local infrastructure necessary to absorb them generally does not exist. Also, because housing and social service are needed before the energy facility begins operation, the local governments receive no tax revenues to finance the needed improvements. Finally, because of the siting of facilities outside municipal jurisdictions, the local government which bears most of the socioeconomic burden may not receive an appropriate share of the revenue.

Such impacts from synthetic fuel development renewed interest in Federal energy impact assistance. In the 96th Congress, four proposals for inland energy impact assistance were introduced. One bill, S. 2332, was passed by the Senate. This bill provided for loan guaranties, and grants to localities which were projected to have population increases of 24 percent or greater in the next three years. Administration would have been simiilar to the "Section 601" program already in existence. 7/

In considering energy impact assistance, the 97th Congress was faced with several questions:

1. Should there be a relationship between Federal aid and state financing efforts, such as state severance taxes?

2. How should the role of industry be incorporated into energy impact legislation?

3. What should be the form (loans, grants, etc.) of energy impact assistance?

4. How would a new energy impact assistance program be coordinated with other related programs of assistance?

5. What should be the relationship between direct aid and aid for planning purposes?

6. What would be the state role in any federal assistance program?

7/ For more information see Zinn, Jeffrey. Energy Impact Assistance Legislation. (Issue Brief 79022). Congressional Research Service.

TITLE II. BIOMASS AND ALCOHOL*

Background

Alcohol fuels legislation during the 96th Congress was considered against a background of intense Congressional interest in the promotion of a national alcohol fuels program, reflected in the more than 100 bills introduced by Members of Congress on this topic. The Energy Tax Act and other legislation passed in the previous Congress had stimulated the beginning of the "gasohol" boom. Outside the Congress, private farm groups were actively promoting the alcohol fuels concept. Finally, the gas lines of mid-1979, the increasing gasoline prices throughout the period, and the Iranian crisis helped to increase the focus on alcohol fuel as an alternative to gasoline.

Legislation as Introduced

The sections on alcohol fuel and biomass of the Energy Security Act had their origins in two Senate bills. The first of these was S. 932, which began its existence as a simple extension of the Defense Production Act, introduced by Senator Proxmire on April 9, 1979. In the version reported by the Senate Energy Committee (S. Rept. 96-387, Oct. 30, 1979), S. 932 established an alcohol fuels program within DOE, and provided for loan guarantees, price guarantees, and purchase agreements to be administered by that agency, with an estimated funding level of $1.2 billion. The second bill was S. 1775, the "Agricultural, Forestry, and Rural Energy Act of 1979", introduced by Senator Talmadge on September 19, 1979, and reported by the Senate Agriculture Committee on October 11, 1979 (S. Rept. 96-365). Much of the substance of this bill was added to S. 932 as a floor amendment. This legislation would have authorized $250 million a year in loans, $1 billion in loan guarantees, and $100 million for demonstration projects to assist in the production of energy from agricultural commodities and forest products, with this extensive program to be administered by the Agriculture Department.

House and Senate Actions

The Senate considered S. 932 in November 1979. It incorporated both the original Energy Committee concept and the Agriculture Committee legislation into S. 932 as it passed the Senate, with the Energy Committee alcohol fuels program as Title III and the Agriculture Committee bill as Title II of S. 932. The House went to conference with no legislation comparable to the Senate language on S. 932 regarding alcohol fuels and biomass.

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*By Migdon Segal, Science Policy Research Division

The conference committee was thus faced with the problem of arriving at a "compromise" between an extensive Senate bill and a House bill which had no comparable provisions relating to alcohol fuels and biomass. The conferees responded by essentially writing their own bill, during deliberations which extended from November 1979 until June 19, 1980, when the conference report was issued (H. Rept. 96-1104).

Legislation as Passed

Title II of the Energy Security Act, as passed, is called the "Biomass Energy and Alcohol Fuels Act of 1980." It includes the authorization of $1.45 billion in funds from the Energy Security Reserve. Of this funding, $600 million is allotted to the Department of Agriculture for biomass energy programs, with up to one-third of this amount earmarked for small-scale biomass energy projects. Another $600 million is allotted to the Department of Energy for biomass energy programs, with $500 million of this funding earmarked for DOE's Office of Alcohol Fuels. The remaining $250 million is for a municipal waste biomass energy program, to be administered by DOE.

Within 6 months after enactment of this legislation, USDA and DOE jointly were to prepare and transmit to the President and the Congress a plan for achieving a production level of at least 60,000 barrels per day (920 million gallons per year) by the end of 1982. By January 1, 1982, this plan was to be extended to 1990, with the goals of achieving a level of alcohol production equal to at least 10 percent of gasoline consumption by 1990. (At current consumption levels, this would be 11 billion gallons per year.)

As for program responsibility, USDA has jurisdiction over alcohol production facilities with a capacity of less than 15 million gallons. DOE would oversee larger facilities. The two agencies would share jurisdiction over large alcohol produciton facilities which use forest products or the products of agricultural cooperatives as feedstock.

The funding in this program is to be available for insured loans, loan guarantees, price guarantees, and purchase agreements for biomass energy projects. Priorities are to be given to projects that use a primary fuel other than petroleum or natural gas in fuel production. Funding for a project will only be available if the agency concerned finds that the BTU content of the fuels used in the facility in question does not exceed the BTU content of the fuels produced, taking into account the displacement of petroleum products which might result from the use of this fuel. Also, funding will only be available if the agency finds that the process will extract the protein content of the feedstock for use as human food or animal feed (if this is practicable). No funding is to be available after September 30, 1984.

The Act establishes an Office of Alcohol Fuels within the Department of Energy, which will carry out DOE's functions relating to alcohol fuels. The director of this office will be directly responsible to the Secretary of Energy, and will be appointed by the President and confirmed by the Senate. The funding requests for this office will be a separate "line item" in DOE's annual budget requests.

The Act provides for expanding several existing USDA cooperative extension and teaching programs to include measures to stimulate research on the use of agricultural commodities for making alcohol.

USDA is to allow set-aside acreage, which is diverted from production under the agricuture programs, to be used for the production of commodities to be converted to fuel.

The President is directed to require, by executive order, that Federal motor vehicles shall use gasohol where it is available at reasonable prices and in reasonable quantities. Exceptions to this requirement may be provided where necessary.

DOE, in consultation with the Department of Transportation (DOT), is to report within 9 months after enactment of this bill on the use of alcohol as a fuel in motor vehicles, both as a blend with gasoline and a pure fuel. The conference report specified that the Environmental Protection Agency (EPA) shall be consulted on the environmental effects of alcohol fuel in the preparation of this report.

Alcohol fuel production will be considered a priority use under the Natural Gas Policy Act, so that natural gas will be allocated for alcohol fuel production in times of shortage.

The President is authorized to allocate crude oil to refineries engaged in the production of gasoline to be mixed with alcohol, and to allocate gasoline to marketers of gasohol, if he finds that alcohol is not being used as a fuel because not enough gasoline is available for blending into gasohol. In making these allocations, he is directed to seek to avoid disruption of oil and gasoline markets and to avoid causing unreasonable increases in the price of alcohol. The conference report specifies that, for the purpose of this section, "alcohol" includes any alcohol produced from any source; for example, it includes methanol produced from coal.

Policy Implications and Pending Actions

Before he left office, President Carter took the following steps to implement Title II of the Energy Security Act: (1) created the Office of Alcohol Fuels within the Department of Energy, (2) commenced the study on motor vehicle usage mandated by the act, (3) took preliminary steps to allocate funding under the authority of the Energy Security Act and the relevant appropriation bills, (4) issued an executive order requiring Federal motor vehicles to use gasohol, with details to be worked out by GSA and DOD.

The continued implementation of the alcohol fuels provisions of the Energy Security Act will be up to the Reagan Administration and the 97th Congress. Early indications were that the stated philosophy of the new Administration might be incompatible with a large, Federally funded alcohol fuels program. The future of this program was therefore in doubt as 1981 began and the 97th Congress convened.

TITLE IV: RENEWABLE ENERGY INITIATIVES*

Background

With the focus of S. 932 on synthetic fuels initiative, renewable energy advocates in Congress had an opportunity to add incentives for the development of other resources without attracting very much attention. Adding Title IV--initiatives for increasing use of renewable resources--helped enlist support for the bill from Congressmen not particularly inclined to support the large synfuels effort while not generating opposition from those who were.

Legislation as Proposed

On October 30, 1979 the Senate Committee on Energy and Natural Resources reported to the Senate an amended version of S. 932, the Energy Security Act. The amended version S. 932 contained a new title, Title VI--Renewable Energy Initiatives. Most of this title, which would become Title IV of the Energy Security Act, came originally from S. 1844, The Omnibus Solar Commercialization Act of 1979 proposed by Senator Durkin on September 28, 1979.

Section 105 of S. 1844 required that solar energy investments in Federal buildings be cost effective. This provision survived in the final bill, but a great deal of debate was involved in setting the rules for determining cost effectiveness. To determine cost-effectiveness, the life cycle cost (LCC) of the project must be computed, and compared to an alternative. However, assumptions made in calculating the LCC can make a vast difference in whether the project is found cost effective.

The most controversial parameters in the LCC calculation were the discount rate, the length of the study period, and, to a lesser degree, the cost assumptions for the alternative. When the measure was incorporated into S. 932 by the Energy Committee, Section 606 of that bill required that the LCC calculation be made using projected world oil prices, and that the investment not be discounted over a study period longer than 30 years. The discount rate was not specified.

On November 8, 1979, Senator Paul Tsongas introduced Senator John Durkin's Amendment 766 to change Section 606 by mandating that noninflating dollars and a 3 percent annual discount rate be used. In addition, the use of projected world oil prices were to be replaced by marginal fuel costs as determined by the Secretary of Energy. This amendment was agreed to by the Senate, but the issues reappeared in the Conference Committee on S. 932. 1/

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* By Tom S. Buckmeyer and Christine DeMoncada, Senior Specialist Division, and Larry B. Parker, Environment and Natural Resources Policy Division.

The first issue was what the annual discount rate should be. To some members of the Conference a higher rate of discount--10 percent or higher--was desirable to insure cost effectiveness in government investments. Other members, wishing to promote conservation and renewable energy resources, favored a much lower discount rate--zero or 3 percent--which would make it easier to justify economically these kinds of investments. This latter group felt that the role of the Federal government was crucial in gaining wider public acceptance of energy conservation, solar and renewable forms of energy. They could help accomplish this by leading the government itself toward investments in such projects.

The second issue was whether 25 or 30 years should be the maximum cutoff point for the economic life of a building. Generally, because the initial fixed costs of conservation and renewable energy projects are high and their annual benefits are relatively small, these investments must rely on long amortization periods to make them economically feasible. Proponents of such investments were concerned that a shorter amortization period would disqualify some projects. The trade-off made in the Conference Committee between the two viewpoints was a compromise between the length of the maximum LCC study period allowed and the discount rate to be used. This was a 7 percent discount rate rather than 10 percent on one side, versus a shortened project study life of 25 years instead of 30 years. The impact of lowering the discount rate was more significant than shortening the study period.

The last issue concerned the use of marginal rather than average retail energy and fuel prices in the LCC analysis. The Conferees decided to allow DOE to determine the methodology and assumptions used in projecting marginal prices, instead of restricting them legislatively to a specific and narrow definition. There is great complexity involved in determining such prices, and the conferees regarded flexibility important in this instance. A more general definition, which included the use of re-

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1/ These issues were discussed in an OTA study for Senator Durkin. See U.S. Congress. Office of Technology Assessment. [Kelly, Henry.] Life cycle cost analysis, June 8, 1979.

gional, rather than national average, prices of fuels and energy was adopted by the Conference, but was not written into the legislation. The Conference Committee filed its report on June 18 and 19, 1980, in both Houses. Title VI became Title IV, Renewable Energy Initiatives. Section 405 of this title was called Establishment of Life-Cycle Costs for Federal Buildings.

Legislation as Passed

Title IV--The Renewable Energy Resources Act of 1980--was intended to promote the use of renewable energy resources and conservation by establishing various new programs and amending existing law. Section 404 required the Department of Energy to coordinate its solar and conservation outreach activities and report annually to Congress on their status. Section 405 amended Section 545 of the National Energy Conservation Policy Act (P.L. 95-619) by making three basic changes in computing the life-cycle cost of energy conservation and renewable energy resource projects in Federal buildings. First, it shortened the maximum project life by 5 years, from 30 years to 25 years. Second, it required that marginal fuel costs, as determined by the Secretary of Energy, be used, rather than national average fuel and energy prices. Third, the legislation reduced the discount rate to be used when evaluating a project from 10 percent to 7 percent per year.

Section 406 created a 3-year pilot program within DOE to demonstrate energy self-sufficency in one or more states through the use of renewable resources. Section 407 amended the Federal Photovoltaic Utilization Act to expand the definition of "Federal facility" and otherwise encourge the use of photovoltaic systems by Federal agencies.

Finally, under Section 408 the original PURPA definition of a small scale hydroelectric project was altered from 15 megawatts as an upper capacity to 30 megawatts. The definition of an acceptable project was expanded to include development at sites where an impoundment structure was not necessary. Additionally, it provided that the Federal Energy Regulatory Commission could grant licensing exemption authorizations on a case-by-case basis for projects with an installed capacity of 5 magawatts or less. Section 409 set up a $10 million loan program for small hydro projects as described in Section 402 of PURPA, and $100 million in loans under Section 403 of PURPA.

Policy Implications and Pending Actions

As the 96th Congress ended, the debate over cost effectiveness measurement of Federal solar and conservation projects appeared to have been settled; the major remaining question was the determination of marginal price projections, and the Congress had left that up to DOE.

Some further action in the case of small scale hydro development remained a possibility, however. Proponents could be expected to urge that the 30-megawatt upper limit definition of "small scale" be increased further, thereby increasing the number of projects eligible for Federal assistance.

The Department of Energy's Small Scale Hydro Program includes grants for feasibility studies of development a new and existing sites. DOE also sponsors demonstration projects and loan programs. The latter fund both feasibility studies and construction. Under DOE's Program Research and Development Announcement, proposals may be submitted to explore means to improve the economic feasibility of "low head hydro", that is, projects with hydraulic heads (depths above the turbine) less than three meters and with an installed capacity of 25 MW or less. "Low head hydro" is a subdivision of small scale hydroelectric power.

Another program which could be instituted is under the Public Utilities Regulatory Policies Act (P.L. 95-617). Section 402 of PURPA authorized Federal loans to municipalities, electric cooper atives, industrial development agencies, and non-profit organizations to defray up to 90 percent of the costs for feasibility studies and license preparation. Under Section 403, construction loans can provide up to 75 percent of the costs of a small hydroelectric power project. This program, however, had not been funded by the end of the 96th Congress.

DOE, the lead agency in the development of small scale hydropower, coordinates the Rural Energy Initiative (REI), a multiagency program with ten regional offices. DOE is governed by PURPA, as amended by the Energy Security Act, in its definition of a small scale hydro project. REI provides grants, loans, and loan guarantees to eligible developers. Other agencies involved through financial assistance programs are the Rural Electrification Administration (REA), the Farmers Home Administration (FmHA), the Department of Housing and Urban Development (HUD), and the Economic Development Administration.

TITLE V -- SOLAR ENERGY AND ENERGY CONSERVATION*

Background

The first version of the Energy Security Act did not contain any solar energy or energy conservation provisions because the original bill focused only on synthetic fuels. However, after President Carter on July 15, 1979, proposed the massive windfall profits tax and the synfuels program, which contained a solar bank proposal, two things happened. First, the Administration expanded the solar bank idea to include energy conservation measures. Second, the Congress began searching for other potential conservation measures to supplement the President's program, which was still largely supply-oriented.

One policy alternative considered by the 96th Congress was to expand and build on existing energy conservation legislation particularly involving residential and commercial buildings. Beginning with the 93rd Congress, which established the Federal Energy Administration and the Energy Research and Development Administration (predecessors of the Department of Energy) both with mandates to conserve scarce energy supplies, each succeeding Congress has enacted such buildingrelated energy conservation legislation. 1/

The programs resulting from past Congressional action fell into four general categories: 1) educational campaigns about efficient ways to use energy; 2) energy conservation research and development; 3) regulatory programs such as building standards; and 4) economic incentives such as grants enabling low-income persons to "weatherize" their existing homes, tax credits for individuals, and a 10 percent tax credit for business. While the overall program was comprehensive, funding was limited, and large energy consuming sectors were left untouched (such as the industrial building sector), or left to the State governments (such as the State public building sector). The 96th Congress for the most part considered some new programs, but basically took existing ideas and programs, and refined and expanded them.

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* By Gary J. Pagliano, Environment and Natural Resources Division.

1/ For a legislative discussion of these programs, see Congressional Research Service. Issue Brief IB 75020, Conserving Energy Resources: The Reagan Budget and the Future Federal Role.

Legislation as Introduced

Different provisions in Title V were introduced at different times in the 96th Congress. On June 20, 1979, President Carter proposed creation of a solar development bank and new tax credits to stimulate solar technologies. His goal was to have the nation receive one-fifth of its energy from the sun and other renewable energy sources by the year 2000. It should be kept in mind, however, that Congressional interest in a bank providing Federally subsidized low-interest loans for solar investments began with the first session of the 94th Congress 2/ and continued through the 95th.

The Solar Bank, as proposed by the President, would have subsidized loans to home owners for purchase and installation of solar systems. It was decided later that the bank would receive $150 million annually from the proposed Energy Security Trust Fund for 10 years, making the total program cost $1.5 billion.

The Energy Security Trust Fund was part of the July 15, 1979, energy message in which the President pledged to reduce oil imports. As part of the program, he addressed the lack of Federal long-term financing for conservation measures; he proposed legislation to:

o Require utilities to offer commercial and residential customers long-term loans for conservation improvements. The principal would be repaid when the house or building was sold. A gas utility could offer loans to homeowners with oil heat to pay for conversion to gas heat, but that would not be required.

o Provide an interest subsidy on loans to owners of buildings heated by oil for conservation efforts or for conversion to natural gas. A proposed amendment to the National Energy Conservation Policy Act (PL 94-385) would authorize $2 billion for this purpose over the next 10 years.

o Require utilities to provide an energy audit to owners of commercial buidings to determine where insulation and other measures could save energy. This was an expansion of the 1978 Energy Conservation Act (P.L. 95-619), which requires that the program be offered to residential customers.

2/ H.R. 3849 (Gude)/S. 875 (Hart). Introduced February 27, 1975. See: Solar Energy Legislation Through the 94th Congress. Committee on Science and Technology. 94th Congress, second session. Dec. 1976.

Shortly thereafter (in September 1979), three bills were introduced in the Senate which would form the core of Senate's contribution to Title V. First, Senator Paul Tsongas introduced a bill (S. 1748) establishing an energy conservation bank to make available below-market interest rate and principal-deferred loans for the purchase and installation of energy conservation measures in residential and commercial buildings. Second, Senators Edward Kennedy and John Durkin introduced an amendment (388) to a bill (S. 1308) establishing a multi-billion dollar grant program in which every household would be eligible for a $750 grant to make conservation related investments. And third, Senator Bill Bradley introduced a bill (S. 1800) which would provide for mass insulation of the nation's homes utilizing private energy conservation companies and local natural gas and electric power utilities. Although the Tsongas bill was referred to the Senate Banking Committee and merged with the Administration's solar bank proposal (S. 524), a similar conservation bank bill was referred to the Senate Energy Committee along with the Kennedy-Durkin and Bradley bills.

The thrust of the House's contribution to Title V was contained in two bills, H.R. 5493 (Ottinger) and H.R. 5726 (Wright). Both bills eliminated the restriction on utilities imposed by the National Energy Conservation Act of 1978, permitting them to expand their programs to supply, install and finance energy conservation measure for customers. Both bills also helped individuals investing in conservation measures. H.R. 5726 made subsidies available to residential and small commercial consumers by establishing an Energy Conservation Bank, which would make subsidized loans. These subsidies would be up to 30 percent of project cost, to a maximum of $1000 for a single family home and $500 per unit for multi-family dwellings. H.R. 5726 would also: 1) amend the existing low-income weatherization program by making program funds available for labor as well as for materials, provided that employees satisfy CETA [Comprehensive Employment Training Act] eligibility requirements; 2) provide funds to publicize energy conservation programs; and 3) provide for training and technical assistance to ensure the availability of qualified building energy inspectors. The bills were divided according to Committee jurisdiction with the banking and finance sections going to the House Banking Committee and the rest going to the House Interstate and Foreign Commerce Committee.

Senate Actions

The two Senate committees deliberated for about a month, holding hearings, studying testimony and conducting mark-up sessions, and then issued committee reports on one consolidated bill, S. 932.

The solar bank was endorsed because the committees believed the bank was necessary to overcome existing barriers to solar energy development. One such barrier is that wider use of solar energy requires a large initial investment entailing a long payback period for the investor. Although the financial benefits would probably exceed the investment cost over the productive life of the solar energy device, many investors are unwilling or cannot afford to accept such a long-term prospect.

But the long-term national benefits of solar, such as reducing oil imports, could be invaluable to the Nation. As OTA Director Jack Gibbons put it:

> A homeowner determining whether to invest in an energy conservation or solar energy device must compare the economics of the investment on the basis of the average cost of energy which he or she usually pays instead of the marginal cost of new energy which is often much higher. It is the latter basis which serves the national interest. 3/

The solar bank, as it appeared in Title II of Senate Banking Committee report, was a hybrid of S. 524 (Morgan) and S. 1595 (Administration). The major differences were:

> (1) Title II and S. 524 established the Bank in HUD with the same corporate powers given the Government National Mortgage Association. The Administration bill simply established the Bank in HUD with no special corporate powers. The authors of Title II felt the Solar Bank should be established on the same footing as GNMA to ensure greater flexibility and visibility for the solar loan program.
>
> (2) Title II and S. 1595 gave the Bank succession for five years while S. 524 terminated the Bank after 3 years. The longer period was believed necessary to demonstrate the Federal Government's long-term commitment to development of solar energy.
>
> (3) Title II and S. 524 established an advisory board for the Bank. S. 1595 did not. It was felt that an advisory board would provide needed technical assistance and additional visibility to the Bank and would guarantee the integrity of the solar loan program.
>
> (4) Title II and S. 1595 provided for a flexible interest rate subsidy. S. 524 fixed the interest rate

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3/ Extending the Defense Product Act of 1950, as amended. Senate Banking and Energy Committee Report on S. 932, No. 96-387. pg. 40

paid by borrowers at 6 percentage points below the 203 (b) FHA-mortgage interest rate. The Committee believed the flexible interest rate was necessary and desirable to ensure that different solar technologies were subsidized only to the degree necessary to stimulate their use.

(5) Title II defined "solar energy systems" somewhat more broadly than either S. 524 or S. 1595.

(6) Title II and S. 1595 permited an individual to receive both a subsidized loan and a solar tax credit. S. 524 prohibited an individual from receiving multiple Federal solar subsidies.

(7) Title II authorized $1.125 billion to be appropriated over 5 years: S. 1595 authorized $635 million over the same period: and S. 524 authorized $450 million over 3 years. (For the first three years, the Title II authorization of $425 million was actually less than that of S. 524). The Committee believed higher authorization brought this proposal more in line with U.S. energy needs, with the importance of solar energy in meeting these needs, and with other energy programs.

Like the solar bank, the energy conservation bank was conceived to overcome the barriers to investing in capital-intensive conservation measures with long paybacks. The Conservation Bank was modelled after the Solar Energy Development Bank. But unlike the Solar Bank, the Conservation Bank initially was not to be a separate corporate entity in HUD, nor was it to have a president, a board of directors or an advisory board. Instead, it was simply going to be a new function of the Government National Mortgage Association.

The Conservation Bank was designed to provide to consumers an increased economic incentive and the financial wherewithal to install energy conservation measures. The increased incentive was presented in the form of "cheap" money--loans available at below-market interest rates. Such loans would appeal to consumers by reducing immediately their total monthly bills, in most cases. To ensure the availability of private money for the relatively small, long-term loans needed to finance energy efficiency measures, the Bank would compensate financial institutions with lump-sum subsidies large enough to provide an adequate rate of return while still covering the increased costs of servicing this type of loan.

The Conservation Bank was to have a five-year authorization of $6.1 billion and the Solar Bank a five-year

$1.125 billion level. The Senate Energy Committee basically adopted the Banking Committee proposals for the two Banks and included them in its version of S. 932. However, the Energy Committee reduced the authorization levels to $2.4 billion for the Conservation Bank and $475 million for the Solar Bank.

The Energy Committee also included the following funding authorizations for several other energy programs in its version of S. 932.

Conservation: The Kennedy-Durkin grant program was pared down. Direct grants would be given to homeowners and renters to fund energy conservation improvements. The maximum grant would be $300, available only to people whose incomes were below the national median ($16,000 a year). Authorization totaled $2.4 billion.

Energy Doctors: The Bradley plan was turned into a pilot program and would work in the following manner:

Energy conservation companies would contract with local or state agencies to audit and make improvments in local residences. The "energy doctors" would be paid by the local agency on the basis of the amount of energy the improvements actually saved compared to previous consumption levels. The local agency would be repaid for its expenses by the Energy Department, which would in turn require the area's utilities to pay the government the savings they enjoyed because energy demand was lowered. Such savings could come from not having to build new generating capacity. The program would be initially financed with $500 million.

Energy Auditors. The Energy Department would be authorized to provide $25 million in grants to states that used the funds to train energy auditors.

Industry Efficiency. Industrial energy efficiency programs would be eligible for an extra $120 million in grants.

Renewable Resources. The low-income weatherization program would be expanded to include assistance for installation of solar energy equipment. Another $40 million would be authorized for that program. A solar information center would be established and funded at $10 million.

Others. Utilities could make loans to residential customers for improvements designed to save energy and were required to complete energy inspections of homes before their sale.

In November 1979, S. 932 came before the full Senate. The major changes in the Title V provisions (in the final S. 932 version) came to the Conservation and Solar Banks. Senator Tsongas, in coordination with Senator Bennett Johnston of the Energy Committee, introduced the following revisions, which were adopted by a voice vote:

o An increase in authorization from $475 million to $750 million for the solar bank. The period of the authorization was changed from five to four years.

o An increase from $2.4 billion to $3.35 billion in the five year authorization for the conservation bank.

o An income cap was placed on eligibility for the subsidized loans. The cap would go into effect after the solar bank had been operating for two years. A $50,000 ceiling on family income was set that would be indexed for inflation.

o One person would head both banks, which would be located within the Department of Housing and Urban Development. The committees had placed the conservation bank in the Government National Mortgage Association.

House Actions

The two House Committees drafted similar versions of the legislation.

Both the Banking and Commerce bills expanded the utility energy audit program. Electric and gas utilities would have to offer to audit all residential buildings and small commercial and agricultural buildings, which were defined as those using not more than 4,000 kilowatt hours of electricity a month, 1,000 therms of natural gas, or the equivalent in other fuel.

States also would have to provide an inspection of a customer's home after installation of conservation equipment. The State could perform the inspection or require that utilities handle it. The second inspection, the Commerce bill said, was designed to prevent fraud.

The legislation authorized utilities to treat the cost of residential energy audits as a "current expense charged to all ratepayers." That means the cost would be considered when setting rates, with all ratepayers sharing in the costs of the audits through their utility bills. The hope of the bill's supporters was that energy savings from conservation would cover the costs of the audits. But if the costs were not recovered, then ratepayers might find an increase in their utility bills to reflect the costs of utility audits.

The legislation authorized $50 million through fiscal 1982 for grants to states for the training of residential building energy inspectors. The two committees also decided to allow utilities to make loans to customers for conservation improvements if the loans were authorized by a state regulatory agency and if the costs of the loan were fully recovered.

Utilities were authorized to pay residential customers to make conservation improvements if the state regulatory agency approved and if the conservation program would cost utility customers less than would new generating capacity or fuel in the absence of conservation efforts. The program would also have to be equitable to all ratepayers. For example, a utility might pay part of the cost of insulating homes in its service area if that resulted in the savings of so much energy that the utility would not have to build another plant and would in that way recover the cost of the insulation.

During the December 4, 1979, Commerce action, Representative David Stockman tried unsuccessfully to strike the provision authorizing capital investments. He argued that the committee had inadequate information about the consequences of the program.

"Ratepayers will be paying each other's heating bills," Mr. Stockman charged. Because the costs of conservation equipment increase with the size of a home, wealthy families with large homes would enjoy substantial benefits, he said. The utility would probably spend less on the small home of a family with a lower income, but that family would still pay a share of all of the utility's investments. Stockman said that would result in a transfer of wealth from poor families to rich families.

He also said the thrust of residential conservation should be to reduce oil consumption, something in which electric and gas utilities share no interest.

But Representative Richard Ottinger said the program provided utilities a chance "to do well by doing good." The utilities could profit by investing in conservation and solar, instead of having to build new power plants, he said.

The House bills on the Conservation and Solar Banks were somewhat similar to the Senate bills except for different authorizations levels and different qualifications for obtaining the subsidized loans. Both the Banking and the Commerce bills established Conservation and Solar Banks in the Department of Housing and Urban Development (HUD). Each Bank was a 4-year program with the authorization level for the Conservation Bank $2.3 billion and the Solar Bank $485 million. This compares to the Senate passed authorization level of $3.35 billion and a 5-year Conservation Bank program and a 4-year $750 million Solar Bank program.

In the House bills, the subsidized loans would not be available to homeowners whose income was more than 120 percent of the median in their area. But owners of apartment buildings, commercial facilities and agricultural buildings would not have to pass an income test to qualify for the subsidy.

The measure limited federal assistance for conservation to 30 percent of the cost of the improvements or $1,000 for a single family home, $500 per unit of large apartment buildings or $10,000 per commercial or agricultural building. The limits for solar improvements were $5,000 per single family home, $2,500 per apartment unit and $100,000 per commercial or agricultural building.

Republicans and conservative Democrats on the Commerce panel opposed the subsidy program, arguing that it obligated the Treasury for potentially enormous expenditures. Representative Phil Gramm called the program a "perverse reallocation of wealth." Mr. Stockman said businesses should be willing to invest in conservation without government subsidy "out of the normal practice of improving their bottom line", because conservation leads to lower heating bills.

But others wanted to broaden the eligibility of homeowners for the solar program by removing the requirment that only low-income residents qualify for loans from the solar bank.

"A prime objective of the solar bank's interest subsidy program is to stimulate an industry," argued Congressman Stephen Neal and eight Banking panel colleagues in supplemental views to the Committee report. "An income test is only one more complicating factor that will discourage participation by both consumer and lender."

The legislation authorized the conservation and solar bank to purchase $4.5 billion in loans from commercial banks or utilities. This authorization replaced Government National Mortgage Association loan purchases, which were authorized in 1978, but had not been made. The bank also was authorized to use $500 million for purchase of mortgages of newly constructed homes with qualified solar systems.

The House leadership consolidated the two Committee bill into H.R. 605 but never got the bill to the House floor. Instead, the bill's provisions were introduced to the already-in-progress House-Senate Conference on synfuels (S. 932 and H.R. 3930).

Legislation As Passed

After 6 months of deliberations, the Conference Committee reported S. 932 in June 1980. Funding for the bill was already in place; in 1979, Congress, expecting that the bill would be passed earlier, had set up a $1 billion reserve for the solar and conservation programs in the Interior-Energy appropration bill (P.L. 96-126).

Title V as passed by the Congress contained few structural changes in the various programs because the conferees generally supported the programs. However, the conferees did disagree on two major points: 1) the program authorization levels and 2) the eligibility requirements for, and the maximum limits to, the Conservation and Solar Bank loans. The summary of Title V as passed, follows.

Solar Energy and Conservation Bank.* The Bank was established within the Department of Housing and Urban Development (HUD) to provide subsidized loans to those making energy conservation improvements or installing solar equipment in residential or commercial buildings.

The bank, authorized through September 30, 1987, would have the same corporate powers as the Government National Mortgage Association. The bank was authorized to spend $2.5 billion in fiscal years 1981 through 1984 for conservation and $525 million in fiscal years 1981 through 1983 for solar energy.

The bank would have a president, an executive vice president for energy conservation and an executive vice president for solar. It would be governed by a board of directors chaired by the HUD Secretary and composed of the Secretaries of Energy, Treasury, Agriculture and Commerce. Local financial institutions that agreed to provide loans at interest rates below the market level or who agreed to reduce the principal on the loans would receive payments from the bank. Eligibility for the subsidy and the level of subsidy would depend on the type of structure and the income level of the applicant.

Conservation. The subsidized loans for conservation improvements would be limited to owners or tenants of existing residences with one to four units whose household income did not exceed 150 percent of their areas's median income level.

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*This section on the Solar Energy and Conservation Bank was written by Glenn Moore, Science Policy Research Division.

The maximum subsidized loan for a borrower whose income was 80 percent or less of the median would be 50 percent of the cost of the improvements -- up to $1,250 for a single family dwelling and up to $3,500 for a 4-unit building. A conservation investor whose income was 120 percent to 150 percent of the median could borrow only 20 percent of his costs, up to $500 for a single family house or up to $1,440 for a four-family building.

Owners of large multi-family or commercial buildings could borrow up to 20 percent of their conservation improvement costs, with a cap of $400 per unit of multi-family dwellings and $5,000 for a commercial building.

The bill specified that at least 15 percent of the funds authorized for conservation ($375 million) be used to assist owners or tenants in existing buildings whose income did not exceed 80 percent of the area median income. In addition to qualifying for loans, those persons would be eligible for direct grants. However, no grant would be available unless the total conservation expenditure exceeded $250.

Solar Energy. Aid for solar energy equipment was made available to all income levels, though more help was provided for lower income households.

For residences with one to four units, the maximum subsidized loan would be 60 percent of cost, for owners with income less than 80 percent of their area's median income; 50 percent for those with an income between 80 and 160 percent of the median, and 40 percent of the cost for owners whose income exceeded 160 percent of the median.

For a single-family dwelling, the maximum subsidized loan would be $5,000; for two-unit buildings, $7,500; for three to four-unit buildings, $10,000; and for buildings with more than four units, $2,500 per unit or 40 percent of costs. Commercial buildings, including some agricultural buildings, could receive subsidized loans of up to 40 percent of costs or $10,000. Builders could receive subsidized loans of up to 40 percent at the limits specified for owners.

Residential Energy Efficiency. The Energy Secretary was authorized to set up four demonstration programs for a new approach to energy conservation.

Interested state or local governments and utilities could contract with one or more independent energy conservation companies, which would be paid an amount equal to the value of energy saved because of residential conservation improvements. The conservation companies would do house-by-house, block-by-block inspections and prescribe improvements designed to save energy.

Utilities would then pay for the recommended energy-saving equipment based on energy saved by the improvements. Utilities would be expected to participate because the conservation efforts would reduce the amount of electrical generating capacity required by the utility's customers, thus theoretically reducing the utility's operating and capital costs. Paying for the conservation equipment was expected to be cheaper than building new power plants.

In case the program did not work as planned, state and local governments would back up the utility with a total of $10 million in federal funds authorized for fiscal 1981 and 1982.

Utility Residential Conservation. The National Energy Conservation Policy Act (P.L. 95-619) was amended to remove a prohibition on utility financing of residential energy conservation improvements. The utilities also could provide and install the conservation equipment as long as they subcontracted the work to qualified independent firms.

Auditor Training. The Energy Secretary was authorized to make state grants in order to train and certify energy auditors, who would inspect residential and commercial buildings and evaluate energy use. Authorization of $10 million for fiscal 1981 and $15 million for fiscal 1982 was provided.

Industrial Conservation. The Energy Secretary was authorized to provide financial aid to industry for research, development and demonstration of energy productivity in industry. Authorization of $40 million for each of fiscal years 1981 and 1982 was provided.

Policy Implications and Pending Actions

Like many other energy programs, the Solar and Conservation Bank faced careful examination by the 97th Congress in the light of the Reagan Administration's expressed goals of cutting government spending and reducing the Federal role in energy. Although the Congress in 1980 appropriated $125 million for the Bank, allowing it to provide conservation grants and loans to about 100,000 to 150,000 households and to help about 12,000 homeowners purchase new homes with passive solar features, the program was vulnerable to attack. Opponents of the Bank argued that rising oil and gas prices would induce homeowners on their own to make conservation and solar improvements, which the Federal Government would help finance with tax credits. Currently Federal tax credits can go as high as 15 percent for conservation improvements and 40 percent for solar technology measures.

Bank supporters, however, believed that low and moderate income families could not afford such improvements without some economic subsidies other than tax credits, which do not appreciably help this income group. As oil and gas prices increase, this group, which cannot afford the improvements, would increase in number as more of their money was required to pay higher energy bills. This phenomenon will especially affect higher cost and longer pay back investments which would have been a main focus of the Bank program.

Another program in Title V that was a potential target of economizing was the energy auditor training program. Proponents of the provision argued that the relatively small program, which provides grants to state energy conservation programs to train and certify auditors, could have a strong effect on conservation at the local level by satisfying the need for more trained personnel.

TITLE VI: GEOTHERMAL ENERGY ACT OF 1980*

Background

Geothermal energy has been used to produce electricity in the United States since the 1960's, when The Geysers station in Northern California started feeding power into the San Francisco service area. However, despite greatly increased interest in this alternative energy source following the 1973 Arab oil embargo, and continued high estimates of geothermal's potential as an energy resource, Geysers remained the only geothermal site producing significant amounts of energy when the 96th Congress took up S. 932 in 1979.

Two major pieces of legislation had been passed since 1970 to promote geothermal development. Since most promising sites are on Federal or public land, the Geothermal Steam Act of 1970 (P.L. 91-581) granted authority to the Secretary of the Interior to issue leases for the development of geothermal resources on those lands, and defined the conditions under which the leases would be granted. The Geothermal Energy Research, Development and Demonstration Act of 1974 established a Federal R&D program and a loan guarantee program for financing geothermal development. In addition, various sections of the National Energy Act of 1978, particularly the Energy Tax Act (P.L. 95-618) and the Public Utility Regulatory Policy Act (P.L. 95-617), gave special treatment to geothermal resource development.

Advocates of the resource, however, argued that further legislative stimulation was necessary. In its report on S. 932, 1/ the Senate Energy Committee said that the existing laws "go a long way toward establishing a legal and regulatory framework favorable to commercial geothermal energy exploration and incentives to stimulate early and widespread use by a variety of users." But it identified the "central force slowing geothermal development" as "the high economic risk perceived by drillers who explore for and confirm geothermal reservoirs."

Legislation as Introduced

The main feature of Title VI of the Energy Security

1/ U. S. Congress. Senate. Committees on Banking, Housing and Urban Affairs and Energy and Natural Resources. Extending the Defense Production Act of 1950, as amended; report together with additional supplemental and minority views to accompany S. 932, 96th Congress, 1st session. Washington, U.S. Govt. Print. Off., 1979. (Report no. 96-387). p.150.

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Act--a "forgivable" loan program in which a developer would pay back a Government loan through revenues gained from a successful development, and could have the unpaid balance cancelled if the project proved to be technically or economically infeasible--had its origin in the Omnibus Geothermal Energy Commercialization Act, S. 1388, introduced June 21, 1979, by Senator Frank Church. Some features of the title came from Senator James McClure's Omnibus Geothermal Energy Development Act, S. 1330, introduced June 13, 1979.

Both S. 1330 and S. 1388 also contained amendments to the 1970 Geothermal Steam Act to streamline the leasing system for Federal lands. Those features were not incorporated in the version of S. 932 reported out by the Senate Energy Committee, however. Separate geothermal leasing bills were later passed in the Senate (S. 1388) and the House (H.R. 6080), but failed to reach conference before adjournment.

Legislation as Passed

Subtitle A of Title VI established a new loan program to assist the geothermal industry in exploring for and confirming the economic viability of geothermal reservoirs, including the drilling of exploratory wells. Loans granted from money appropriated to the Geothermal Resources Development fund could cover 90 percent of the costs of space heating or process heat projects, or 50 percent of other projects. A loan limit of $3 million per project was set.

Subtitle B required a DOE study on the need for and feasibility of an insurance program to compensate for a reservoir failure after significant investment had been made in its development. Subtitle C established a separate loan program for 90 percent of the cost of feasibility studies and regulatory applications, and 75 percent of the costs of construction for nonelectric projects. The loans could be canceled if the project turned out not to be feasible.

In Subtitle D the existing loan guarantee program, contained in Title II of the 1974 RD&D act, was amended to give an advantage to electric, housing or other cooperatives or municipalities. Some procedural streamlining was also included, and the loan guarantee program was extended until the end of FY 1990.

Subtitle D also gave some regulatory advantages to geothermal projects by amending the Federal Power Act and the Public Utility Regulatory Policies Act.

Policy Implications

Two issues remained in the geothermal area as the 97th

Congress began. Funding of the Geothermal Resources Development Fund through the appropriations process would be the subject of debate in tight budget circumstances, and the leasing of geothermal sites on Federal land, still unsatisfactory to geothermal advocates, remained a potential issue.

TITLE VII. THE ACID PRECIPITATION ACT OF 1980*

Background

Awareness of potentially very significant impacts associated with acidic precipitation grew to the point where the 96th Congress acted on the problem in a specific way.

Congressional attention was first drawn to this problem in 1975 when the Subcommittee on the Environment and the Atmosphere, of the House Science and Technology Committee, held hearings on "Research and Development Related to Sulfates in the Atmosphere." Concern continued during the ensuing years but was primarily expressed in hearings related to other subjects such as amending the Clean Air Act, in 1977, and proposed legislation mandating the use of coal by electric utilities in 1979. 1/

By 1980, congressional concern was raised to the degree that most Members believed some action was necessary. However, there were many unresolved questions focusing on the extent of the problem, the degree to which coal burning contributed to it, and the extent to which mitigating actions would reduce the problem. Therefore, Congress followed the path most often taken in a case like this: It mandated further study of the problem. This mandate is contained in Title VII of the Energy Security Act, a title also known as The Acid Precipitation Act of 1980.

Legislation as Passed

Title VII establishes a comprehensive 10-year program to identify the causes and effects of acid precipitation and to identify actions to limit or ameliorate its harmful effects. The Act creates an Acid Precipitation Task Force, with the heads of the Department of Agriculture, the Environmental Protection Agency, and the National Oceanic and Atmospheric Administration as joint chairmen. Other members of the task force include:

> (1) one representative from each of the Departments of Interior, Health and Human Services, Commerce, Energy, and State; one from the National Aeronautics and Space Administration; one from the Council on Environmental Quality; one from the National Science Foundation; and one from the Tennessee Valley Authority;

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1/ See Chapter III for a discussion of "oil backout" legislation.

(2) the directors of four national laboratories--Argonne, Brookhaven, Oak Ridge, and Pacific Northwest; and

(3) four additional presidential appointees.

The national laboratories are to function as a research consortium and are to report to and take direction from the joint chairmen.

The administrator of the National Oceanic and Atmospheric Administration is to serve as director of the research program conducted under this title.

The task force is to develop a comprehensive research plan which is to include programs for:

(1) identifying the sources of atmospheric emissions contributing to acid precipitation;

(2) establishing and operating a nationwide long-term monitoring network to detect and measure levels of acid precipitation;

(3) research in atmospheric physics and chemistry to facilitate understanding of the processes by which atmospheric emissions are transformed into acid precipitation;

(4) development and application of atmospheric transport models to make possible prediction of long-range transport of substances causing acid precipitation;

(5) defining geographic areas of impact through deposition monitoring, identification of sensitive areas, and identification of areas at risk;

(6) broadening of impact data bases through collection of existing data on water and soil chemistry and through temporal trend analysis;

(7) development of dose-response functions with respect to soils, soil organisms, aquatic and amphibious organisms, crop plants and forest plants;

(8) establishing and carrying out system studies with respect to plant physiology, aquatic ecosystems, soil chemistry systems, soil microbial systems, and forest ecosystems;

(9) preparing economic assessments of (A) the environmental impacts caused by acid precipitation on crops, forests, fisheries, and recreational and aesthetic resources and structures, and (B) alternative technologies to remedy or otherwise ameliorate the harmful effects which may result from acid precipitation;

(10) documenting all current Federal activities related to research on acid precipitation and ensuring that such activities are coordinated in ways that prevent needless duplication and waste of financial and technical resources;

(11) effecting cooperation in acid precipitation research and development programs, ongoing and planned, with the affected and contributing States and with other sovereign nations having a commonality of interest; and

(12) analyzing the information available regarding acid precipitation, in order to formulate and present periodic recommendations to the Congress and the appropriate agencies about actions to be take by these bodies to alleviate acid precipitation and its effects.

Further, subject to certain limitations, the plans to be developed by the task force were to include provisions for financial resource and technical program management of Federal acid precipitation research and development.

The comprehensive plan was to be submitted in draft form to Congress, and for public review, within 6 months after enactment of the Act. It was to be available for public comment for 60 days after submission and was to be presented to the President and to Congress 45 days later.

The plan was to be the basis for authorizations and appropriations for the remaining 10 years of the program.

The law authorized for appropriation to the National Oceanic and Atmospheric Administration $5 million for FY81 to carry out the mandates of Title VII. It authorized $45 million for the remaining 9 years of the program, but funding was to be through annual appropriations.

Prospects in the 97th Congress

As the 97th Congress began, pressure on Congress was expected to increase for legislation to reduce levels of pollutants which act as precursors to acid precipitation.

These pressures come from States which feel the major impacts, namely those in the Northeast, and from Canada, which also claims severe impacts from acid precipitation originating primarily in the Ohio River valley.

The result could be in the form of amendments to the Clean Air Act, although it was just as likely that specific legislation mandating certain clean-up actions--e.g., coal washing--might be enacted. In any event, the pressures to act were growing and a congressional response in the 97th appeared likely.

TITLE VIII - STRATEGIC PETROLEUM RESERVE*

Background

The Energy Policy and Conservation Act of 1975 (P.L. 94-163) authorized the creation of a Strategic Petroleum Reserve, intended to contain enough crude oil to replace imports for 90 days. A revised plan subsequently established that the Reserve would hold 250 million barrels (MMB) by December 1978, 500 MMB by December 1980, and 750 MMB to be held in reserve by December 1985.

The program fell behind schedule; only 69 million barrels were in the reserve at the end of 1978, far short of the projected 250 million barrels. In late 1978, the revolution in Iran diminished and subsequently cut exports entirely from that nation, triggering uncertainty in world oil markets which drove prices up as the availability of supply seemed to narrow. In November 1978, the Carter Administration suspended purchases for the Reserve, citing difficulty of securing supply and in some hope that any move to ease demand in spot markets would moderate the spiraling effect on prices. The Administration was also concerned that it was competing with domestic refiners for scarce supply. Shipments to the Reserve continued at a diminishing rate through August 1979 when the Reserve stood at 91 million barrels.

President Carter had budgeted funds for resumption of purchases for the SPR, but opted in early 1980 not to do so. This policy decision was intended to mollify Saudi Arabia which, on July 1, 1979, had increased crude production by 1 million barrels daily to ease uncertainty in world oil markets. The Saudis apparently premised maintenance of the higher production rate on assurances that the oil would not be used to fill the SPR. Purchases for the Reserve would also increase demand for oil, making it more difficult for the Saudis to resist pressure from OPEC to raise prices further.

The Congress did not share the Administration's perception. What divided them appears to have been the Administration's concern with the short-term international political and economic interests of the Nation, and the Congress' concern with longer-term national security and emergency preparedness. Congress expressed its will in amendments to P.L. 96-294, which required that the Administration resume filling the Reserve at 100,000 b/d. A subsequent amendment, at the close of the 96th Congress, to the FY81 DOE appropriations legislation (P.L. 96-514) raised the requirement to 300,000 b/d.

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Senate Action

The Energy Security Act had modest beginnings as a comparatively short piece of legislation intended to amend the Defense Production Act and containing no language with respect to the Strategic Petroleum Reserve. But amendment to the Energy Security Act affecting the Strategic Petroleum Reserve was one of the many additions to the bill as it grew in complexity and scope during Senate debate. During consideration in the Senate of a substitute measure extending the Defense Production Act reported from the Senate Energy Committee, Senator Robert Dole, with the support of Senator Bill Bradley, introduced an amendment to resume fill of the Reserve at 100,000 b/d. The proposed amendment would have also repealed paragraphs (1) and (4) of section 160(b) of EPCA, which justified the suspension of purchases for the SPR because maintaining the fill rate would "have an adverse impact on supply levels and market prices," and be inconsistent with the legislated objective of "minimization of the cost of the Reserve."

The amendment also exempted purchases for the SPR from import quotas imposed under the Trade Expansion Act, but this provision was dropped from the amendment during debate. The House had previously taken exception to a Senate amendment to the TEA, claiming jurisdiction because that Act dealt with revenues and fees.

Senator Dole argued that money had been appropriated for SPR purchases and storage facilities were available, and disagreed that U.S. security could be equated to high prices on spot markets. "Those who say that the spot market price of $40 a barrel is too much to pay for SPR oil are telling us that our national security is not worth the price." 1/

The amendment was withdrawn for modification after Senator Bennett Johnston, expressing qualified support for the amendment, voiced concern that it required fill of the Reserve without allowing for available storage capacity and that there might be instances when it would be advisable for the President to modify the fill rate because of world markets and domestic shortages. The modified amendment, brought up again later that day, required a minimum fill of 100,000 b/d--paragraphs (1) and (4) of section 160 of EPCA "notwithstanding," and subject to adequate storage

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1/ The Debate in the Senate on the Energy Security Act is included in a comprehensive three-volume legislative history. U.S. Congress. House. Committee on Banking, Finance and Urban Affairs. Compilation of the Energy Act of 1980, and 1980 Amendments to the Defense Production Act of 1950, September 1980, Part 2: p. 1416.

capacity. The amendment authorized DOE to contract for construction of additional capacity as needed.

Senator Johnston still expressed reservations, noting that the modified amendment had the effect of nullifying the flexibility afforded the President by section 160 of EPCA, even if the amendment did not constitute outright repeal of those provisions. The principals agreed to vote on a motion to table, which was defeated 36-53. The amendment was subsequently agreed to, and went to conference as part of S. 932.

Conference Action

The provisions pertaining to the Strategic Petroleum Reserve swelled so in conference that S. 932, as reported from conference, included a separate Title VIII adressing the SPR. The conferees retained the thrust to the Senate amendment, mandating an average fill of 100,000 b/d "without regard to the objectives of section 106(b)," though it would be expected that the Secretary of Energy would "abide by these objectives to the extent they are compatible with the mandated fill." In other words, the conferees seemed to feel that the guidelines for the program established in EPCA, requiring administrators of the SPR program to minimize the cost of filling the Reserve, and factor in the impact of SPR purchases upon supply and price, should not be used as a reason for not maintaining a fill rate averaging 100,000 b/d. The requirement would be effective with the commencement of FY81, and the conferees noted that the rate was intended as the minimum fill and was not to be considered the "appropriate rate of injection."

The conference language also linked fill of the SPR with sales of crude from the Elk Hills Reserve. Noting that production from Elk Hills was averaging 160,000 b/d, the conferees required that Elk Hills production could not be disposed of other than to fill the SPR if the SPR fill fell below 100,000 b/d. 1/ This restriction would terminate when the Reserve reached 500 million barrels.

The conferees provided that the President can request exemption from the fill requirement if compliance would impair the Nation's response to a shortage or hamper the Nation's ability to met international obligations during a shortfall. The President would have to transmit such findings under the procedures specified in section 552 of EPCA. The fill requirement would be suspended should the SPR be drawn down in an emergency, and the period of the suspension would not be averaged into any calculation to determine compliance with the fill requirement.

1/ There were a few exceptions, including production for national defense.

To reduce the cost of acquiring oil for the reserve, the conference legislation provided that the Government would be eligible to receive entitlement payments for oil purchases. 1/ This had the effect of giving the Government equal access to lower-tier crude oil enjoyed by crude purchsers in the private sector without the delay that would ensue if the Government were instructed to procure only lower-tier oil itself. The conferees argued that "dealing" the Government into the entitlements program was not inconsistent with the objectives of the price control program because the SPR would afford protection for all the Nation's refineries in the event of a shortage. The conferees did not estimate the potential savings to the Government from this provision, but whatever savings would accrue would be limited to one year because the price control regulations would expire, unless extended by Congress, on September 30, 1981. The conference language on the Strategic Petroleum Reserve was not controversial to either the House or Senate during debate on the conference report and was adopted intact.

As has been noted, the conferees intended that the 100,000 b/d fill requirements was to be a minimum rate and not a value judgment on an appropriate fill rate. The importance with which the 96th Congress regarded the SPR was underscored on November 13, 1980, when the Senate debated an amendment to the DOE FY81 appropriations bill, to provide that the President accelerate the fill rate to 300,000 b/d. The amendment, introduced by Senator Bradley, was intended to reconcile the required fill rate with the rate of fill that could be financed by the appropriations itself.

Some Senators expressed opposition to the amendment, noting that market conditions could diminish the purchasing power of the appropriated funds, making compliance more expensive than budgeted. There was further objection that it was inappropriate to amend the Energy Security Act in an appropriations bill, and that the amendment did not provide the Administration with much flexibility in making

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1/ The price control program had the unintended effect of giving advantage to refiners who had, on average, greater access to low-cost domestic crude than other refiners who purchased higher-cost, imported crude. The entitlements system was designed to equalize crude acquisition costs between all refiners, and to share among all refiners the benefits of access to lower-cost domestic crude. Refiners having an average acquisition cost below the national average paid cash "entitlements" to the Treasury which were disbursed to refiners with acquisition costs above the national average. The value of the entitlement per barrel was calculated monthly by DOE.

acquisitions for the reserve because the amendment lacked language specifying the time period over which compliance would be measured, and therefore seemed to preclude allowing acquisitions to temporarily fall below 300,000 b/d even when it might be prudent to do so for the short term.

On November 17, Senator Bradley introduced a modified amendment to require an average annual rate of fill of 300,000 b/d, or at a rate that would fully utilize appropriated funds. Additional language established that the amendment was in addition to, and would not affect the operation of, Title VIII provisions in the Energy Security Act. What this meant was that, were the amendment approved, the required fill rate would be 300,000 b/d, but the flexibility afforded to the administrators of the program by section 160 of EPCA would apply. However, the amendment preserved the provisions in Title VIII establishing a 100,000 b/d minimum fill rate, section 160 notwithstanding. In sum, the Administration could, because of cost or market factors, adjust purchases below 300,000 b/d (at an average annualized rate), but could nct allow the fill rate to fall below 100,000 b/d without the approval of Congress.

The specification that the 300,000 b/d rate was an annualized daily rate and the retention otherwise of the previously enacted Title VIII satisfied reservations expressed a few days before, and the amendment passed without objection. The provision was retained in the final DOE FY81 appropriations law (P.L. 96-514).

Policy Implications and Pending Issues

The 96th Congress had been frustrated in much of its energy emergency contingency planning--unhappy with the standing system of price and allocation regulations but unable to agree upon proposed emergency conservation measures, a system of gasoline rationing or other proposed substitutes. The feelings of powerlessness engendered by that long and frustrating debate were reflected in the urgency with which supporters of the SPR amendments argued their position. Resumption of purchases for the SPR was an affirmative act that appeared in the best interests of the Nation, even when balanced against the potentially hostile reaction of Saudi Arabia and other OPEC nations.

Partly due to slackening demand for world crude, no international repercussions surfaced as DOE initiated procedures to contract for SPR purchases. Deliveries of oil to the SPR resumed on September 23, 1980, and by the end of the 96th Congress, the Reserve held 107.8 million barrels with no problems anticipated in complying with the directives in the Energy Security Act or the FY81 appropriations bill.

The Crude Oil Windfall Profit Tax Act of 1980 (P.L. 96-223)*

Background

In an attempt to reverse the Nation's growing use of foreign petroleum and to encourage greater domestic oil production, President Carter began in June 1979 a gradual process of removing domestic petroleum price controls that had existed in some form since August 1971. Despite the steep world oil price increases and supply interruptions during the middle to late 1970s, U.S. consumption of petroleum and relative dependence on foreign oil had continued to exceed 40 percent through early 1979.

Under the proposed phased decontrol, increasing shares of domestically-produced oil would be allowed to sell at world oil prices, and it was anticipated that U.S. oil companies would derive substantially higher revenues and profits from the new price levels. Many outside the oil industry held that much of the additional profits would be an unearned "windfall" that should be recovered to assist in financing other energy objectives and related energy concerns, and for equity and income-distribution reasons.

Opponents of the tax argued that it would yield at least two unwanted results. First, they said, the tax would remove some of the profits from oil operations that would otherwise go into exploration activities (both here and around the world), which would increase the oil and gas supplies available for U.S. energy needs. Second, the tax would further reduce financial incentives to produce more oil, especially from higher-cost marginal properties, and some incentive to engage in more risky and/or deeper exploration activities.

Windfall profits tax (WPT) proposals introduced and debated in the 96th Congress were mechanisms for the redistribution of anticipated oil company revenues to the general public or to low-income groups, or for use in energy conservation and alternative energy development. Much of the debate over WPT centered around questions of the extent to which any tax would discourage domestic production of oil, to whom the increased revenues from decontrol should accrue, and how the burden of any such tax would be apportioned among oil producers. President Carter signed the Crude Oil Windfall Profit Tax Act of 1980 (P.L. 96-223) on April 2, 1980. The final bill also included many tax credit provisions for the residential and business sectors.

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Explicit in the proposals was the contention that a substantial portion of the additional profits to be earned by the oil companies (as a result of decontrol) from properties producing oil before 1979 should be considered excessive. This was asserted on the grounds that the world price is an artificially set monopoly price, rather than a truly economic (free market) price, that much of the additional profits do not represent a reward for risk undertaken, and that, for many properties already producing oil, higher prices and profits would provide little incentive for additional production since little additional oil can be obtained. Opponents of WPT responded that supply and demand interaction rather than production cost is the normal and appropriate determinant of price and replacement value, and that the price charged by an OPEC country--even though a monopoly price--approximates the true replacement value. Only this economic price, in this line of reasoning, would provide sufficient funds to undertake new exploration, development and production.

Proponents of the WPT argued that a substantial portion of the revenues gained from decontrol should be redistributed because much of those revenues would be from oil that would have been produced profitably in the absence of decontrol. And WPT advocates said that the additional receipts should be used to further important goals of energy policy--energy conservation, switching from oil use, and development of alternative energy sources--and to decrease hardship among low and middle-income families caused by higher energy prices.

On the other hand, some believed that certain categories of oil--heavy crude, "stripper" oil (from wells producing 10 barrels per day or less), and oil produced by advanced ("tertiary") recovery techniques, for example--required the economic incentive offered by world prices because of the higher costs associated with their production. Too great a reduction of the revenue gains resulting from decontrol, they said, might reduce significantly or eliminate producer incentives to raise domestic production.

A departure from the above lines of argument for and against a WPT could be found in the thesis of analysts who contended that decontrol itself would result in little or no further rises in overall oil industry revenues. Petroleum price controls and other regulations, it was argued, have not prevented domestic petroleum product prices from being set at world levels; but given their nature, have resulted in revenues being shifted from producers (or producing divisions of integrated companies) to refiners (or refining divisions of integrated companies). Starting from such circumstances, decontrol would merely shift revenues back from refiners to producers; only the present level of revenues or those generated by future OPEC price increases would be available for taxation of the kind being considered, and a WPT would greatly reduce present oil industry profitability and its capacity to invest in additional production and refining facilities. Opposing this approach are those who say that it has not been substantially proven that domestic petroleum product prices equal those abroad; or, if they are at world levels, it would indicate "excessive" oil industry profits that should be taxed, and redistributed.

Oil Industry Tax Treatment. Debate on some of the issues connected with WPT proposals focused on prior tax treatment of the oil industry. It has been held that oil and gas production have received favorable tax treatment for many years, although one special provision, dealing with percentage depletion, was repealed for most oil and gas producers in 1975. Even without percentage depletion, a substantial portion of capital investment can be deducted when incurred, resulting in a lower effective tax rate than would occur under the standard tax system.

Specifically, income tax law allows certain expenses related to the exploration for minerals and the development of wells (and mines) to be deducted in full against current earnings rather than to be capitalized and deducted gradually over the life of the property. The advantage of deducting expenses currently ("expensing") rather than capitalizing them is that current deduction results in a comparative understatement of taxable profits and a deferral of taxes. The value of the deferral is increased by the effect of inflation. (The provisions for oil and gas are quite different from those for hard minerals). There is, however, a minimum tax of 10 percent levied on selected tax preferences, which reduces to some extent the tax savings that the oil and gas industries can derive from such preferences.

Another provision alleged to be especially beneficial to the oil and gas industries is the foreign tax credit (Sections 901-906 of the Internal Revenue Code), which allows the crediting of foreign income-related taxes against United States tax liability, thereby reducing that liability dollar for dollar. Its purpose is to prevent double taxation of income earned by U.S. companies abroad. In the case of the oil companies, production taxes (which may be in the nature of royalties) are treated as creditable taxes. The major oil companies account for almost one-half of the foreign tax credits claimed by corporations. Calculations by the CRS have indicated that oil and gas production does enjoy a more favorable tax position than do other industries on average.

A lower tax rate leads to a greater allocation of capital to the production of oil and gas than would occur under a higher tax rate. Prior to the substantial price rises of foreign oil, a major reason advanced for special treatment of the petroleum industry (in tax policy and in other areas as well, such as import quotas) was national security, because foreign oil prices were relatively low and allegedly posed a threat to the existence of a domestic industry (vital in time of national emergency). Some contend now, however, that because foreign oil prices have increased substantially and the price of new domestic oil has increased substantially as a result, favored treatment of oil and gas is no longer appropriate. The counterargument is that WPT taxes amount to unfavorable treatment of oil and gas, when the need for domestic production of oil and gas is as great as ever.

Legislation as Introduced

Several windfall profits tax bills were submitted shortly after President Carter's April 1979 energy message. H.R. 3919, one of the modifications of the President's original proposal, was introduced by Representative Al Ullman, Chairman of the Ways and Means Committee, on May 3 and passed the House on June 28, 1979 as the Crude Oil Windfall Profit Tax Act of 1979. The Senate approved a somewhat different measure on December 17, 1979. The bills then went to a Conference Committee to work out a compromise on the differences.

The Administration's proposal, the House bill, and the Senate bill (summarized in Table 1) were series of excise taxes placed on the differences between future decontrolled oil prices and base prices for the various categories of oil defined under the current regulatory system and in the bills. The tax on each category is calculated by multiplying the tax rate by the difference between the selling price and the base price, and multiplying that amount by the volume of oil produced in that category. With the volume of oil increasing in the higher price categories with the passage of time, and some costs of production growing less rapidly than price, producer profits were anticipated to rise substantially.

Comparison of the House, Senate, and Administrative Proposals

Under the Administration's proposal, revenues gained from prices received above the base price would be taxed at the same rate (50 percent) for all categories. Thus, no tax rate distinction was made between the categories to allow for any differences in potential production incentives, nor any within the "tier three" category to allow for differences in oil quality or location.

The House and Senate bills taxed the revenue gains

TABLE 1

WINDFALL PROFITS TAX BILLS

A COMPARISON OF ADMINISTRATION, HOUSE AND SENATE PROVISIONS

CATEGORY	ADMINISTRATION	HOUSE	SENATE
OLD OIL			
Rate:	50%	60%	75%
Base:	$6/barrel*	$6/barrel*	$6/barrel
MARGINAL OIL			
Rate:	50%	60%	60%
Base:	$13/barrel*	$13/barrel*	$13/barrel*
NEW OIL			
Rate:	50%	60%	75%
Base:	$13/barrel*	$13/barrel*	$13/barrel*
NEW DISCOVERIES			
Rate:	50%	50% on first $9 per barrel over BP 60% on higher	10%, minus severance taxes
Base:	$16*	$17/barrel BP plus inflation +2%/year	$20/barrel BP + inflation + 2%/y
INCREMENTAL TERTIARY			
Rate:	50%	Same as for new discoveries	20%, minus sev. taxes
Base:	$16/barrel	Same as for new discoveries above set level	$16.30/barrel BP + inflation + 2%/y
STRIPPER			
Rate:	50%	60%	60%
Base:	$16/barrel	$16/barrel BP, plus inflation and quality and location differentials	Same 60% base as House
ALASKAN NORTH SLOPE			
Rate:	50%	50%	75%, minus sev. taxes
Base:	$16*	$7.50/barrel BP, plus inflation exempts newly discovered North Slope oil	Same as new oil; exempts newly discovered North Slope oil
HEAVY OIL		Taxed in tier of origin	Same as for tertiary
Revenues (1980-1990)	$292 billion	$277 billion	$178 billion

*Base price, plus inflation BP=Base Price

Sources: Congressional Budget Office, Congressional Research Service; Joint Committee on Taxation.

from decontrol and those from OPEC price increases at different rates. For the House, the tax on lower-and on upper-tier oil (60 percent each) would be levied on the difference between the decontrolled price and the price that would have been assigned these oils under an indefinite extension of controls. The taxes on stripper (60 percent), incremental tertiary (50 percent), and newly-discovered oil (50 percent) would be levied on the difference between their future decontrolled prices and their price before the 1979 OPEC price increases. Already-discovered Alaskan North Slope (ANS) oil would be taxed on revenues from prices above its 1978 wellhead price, which was less than the upper-tier price it was allowed under EPCA.

The Senate version taxed the revenue gains from decontrol relatively more heavily than the gains from OPEC price increases. It did so by (1) using higher tax rates than the House for lower-tier oil (which was assigned the lowest controlled price and thus receives the largest gain from decontrol) and for upper tier; and (2) imposing a much lower tax rate on heavy, tertiary, and newly discovered oil, the latter two of which were assigned the highest price levels under controls and thus derive their gains mostly from OPEC price increases. The Senate bill exempted from WPT the first 1,000 daily barrels of oil produced by any independent oil company, and would give already discovered Alaskan North Slope oil upper-tier treatment.

In sum, as an analysis by the Congressional Budget Office indicated, the bills differed in the extent to which incentives were offered to produce various types of oil and how these revenue gains would be allocated between the public and private sectors. Relative to the House bill, the Senate version provided rewards to tertiary production and newly discovered oil, which are generally thought to be more responsive to price increases, and imposed higher tax rates on lower-tier oil, which are thought less price sensitive.

In aggregate dollar terms, it was estimated that the Senate bill would shift less revenue to public sector uses than the House bill--$178 billion versus $277 billion for the 1980-1990 period. The Senate bill, however, would begin to phase out the WPT when total net cash receipts reached $189 billion, which could be after 1990. It was estimated that the President's original WPT proposal would yield $292 billion (when account is taken of the OPEC price increases since April 1979).

Projected Impact of WPT Proposals on Domestic Production of Oil. An important aspect of the debate on the WPT proposals concerned the degree to which decontrol of oil prices will stimulate additional production of domestic oil. Differences in the Administration's, House's, and Senate's tax rate structures reflected to some extent differences in opinions about potential responsiveness to price increases by production of individual categories of oil (e.g., old, new, tertiary) as well as by overall domestic supply.

TABLE 2

ESTIMATED REVENUE EFFECTS OF SENATE AMENDMENTS TO HOUSE-PASSED VERSION OF H.R. 3919, 1980-1990
(millions of dollars)

	Item	Total
	Net gain from the Windfall Profit Tax under the House bill....................	$276,821 (a)
	Senate Amendments to the Houre Bill	
(1)	No denial of percentage depletion	-12,931
(2)	Exemption of 1st 1,000 barrels/day of independent producer and certain royalty oil production	-42,675
(3)	75% rate on tier 1 oil	1,498
(4)	75% rate on tier 2 oil	16,861
(5)	Reduction of tier 2 base by 25 cents ..	1,268
(6)	Removal of phase-up of tier 2 base	1,176
(7)	Including certain tier 2 Alaskan oil...	1,897
(8)	Tax new oil at 10% on $20 base	-42,707
(9)	Tax incremental tertiary oil at 20% on $17 base	-19,599
(10)	Tax heavy oil at 20% on $17 base	- 2,531
(11)	Including high water-cut tier 2 oil....	- 307
(12)	Including Cook Inlet oil in tier 2	- 103
(13)	Exemption for oil income of Indian tribes	- 494
(14)	Exemption for oil income of charitable schools and hospitals ...	- 199
(15)	Exemption for front-eng financing oil released to finance CO2 and chemical surfactant incremental tertiary	- 125
(16)	Expansion of marginal oil definition...	- 22
	Net gain from Windfall Profits Tax under the Senate amendment	$177,827

(a) The House and the Senate bills would have raised a small amount of income tax revenue in 1979 because the estimates assumed that the tax on newly discovered oil reduces intangible drilling deductions in that year.
Note: columns may not add due to rounding.
Source: Joint Committee on Taxation, Conference comparison on H.R. 3919 (Crude Oil Windfall Profit Tax Act of 1979), December 18, 1979, p. 48.

Disagreements hinged on perceptions or estimates of the price elasticity of supply of domestic oil. Estimates of oil supply price elasticity range as low as 0.05 for the short run (where there is insufficient time for investment to expand capacity) to around 0.5 for the long run. (Price elasticity of supply is the ratio of the percentage increase in price. Thus, an increase in supply of 10 percent in response to a 100 percent increase in price indicates an elasticity of 0.1.) Estimates of oil supply price elasticity are uncertain because of the great diversity of oil-producing properties (regarding location, depth and age of wells, quality of oil produced and other factors), the long lead times from initial exploration to production, and the uncertainty of discovery rates and levels.

Estimates of the effect of decontrol on domestic oil supply were made by the Congressional Budget Office (CBO), which calculated that decontrol without a WPT would result in 1990 production being 1.17 million barrels per day greater than under an extension of controls--7.92 million barrels per day versus 6.75 million barrels per day. With the House-passed version of WPT, 1990 production would be 7.08 million barrels. The Senate's Finance Committee version, according to CBO, would yield 7.63 million barrels (see Table 3). (CBO did not estimate production for the full Senate version.)

TABLE 3

PROJECTED CRUDE OIL PRODUCTION UNDER FOUR SCENARIOS, 1985 AND 1990

	1985	1990
Continued Controls	7,530	6,750
House Bill	7,890	7,075
Senate Finance Committee Bill	8,155	7,625
Decontrol With No Tax	8,345	7,915

Source: Congressional Budget Office, The windfall profits tax: a comparative analysis of two bills, November 1979, pp. 76-79.

Impact of Decontrol and WPT on Oil Company Revenues. Decontrol and any of the various WPT scenarios that were under consideration would have had a great impact on oil company profits. However, there was considerable dispute over what fraction of additional gross revenue to oil producers and royalty-holders resulting from oil price deregulation and future OPEC price increases would be absorbed by higher State and Federal taxes and what fraction would be retained.

CRS estimated the effect of a windfall profits tax on aggregate oil company net income based on estimates of increased revenues made by the Office of Tax Analysis of the Department of the Treasury. With a relatively stiff tax of 75 percent on windfall revenues, oil companies would earn $254.3 billion from 1979-1984. This was significantly less than the estimated $327.8 billion earned under a relatively lenient tax rate of 25 percent on $463.1 billion earned under decontrol with no WPT.

Yet, even with the higher tax rate of 75 percent, projected net income for the years 1979-1984 was 51 percent above the projected net income of $168.3 billion without decontrol. These estimates were made in the Fall of 1979. Under the thesis that petroleum product prices were already at world levels and would not rise under decontrol, the tripling of oil company revenues estimated by the Treasury Department would not be expected and tax revenues would be smaller.

Use of Additional Tax Revenues. Debate on the windfall profits tax also concerned the disposition of the additional tax revenues. Alternatives included earmarking all or part of the funds for specific energy or nonenergy objectives such as greater energy efficiency, development of alternative energy sources and encouragement of their use, softening the burden on low-income families of higher energy prices, and simple placement in the general fund. Techniques included tax credits, grants, low-interest loans, and direct outlays for goods and services. Any one or all of these could be administered through a trust fund.

Both the House and Senate bills allocated receipts from the windfall profits tax for various energy-related programs. The House bill established an Energy Trust Fund to disburse the gross windfall tax receipts over the 1980-1990 period, but it did not spell out the particular uses of these funds. The Senate bill, on the other hand, made a portion of the projected $177.8 billion net tax receipts generated from the windfall tax over the 1980-1990 period available for assistance to low-income families, tax credits to stimulate residential and business energy conservation, the production of alternative energy sources, and the nonenergy objectives noted below. (Net tax receipts are the gross windfall tax liability plus the regular corporate tax liability on profits after the deduction of the gross windfall profits tax, less the liability that would have been incurred under the corporate income tax without a windfall profits tax.) The major categories of allocation totaled $72 billion, with program costs estimated by the Joint Committee on Taxation as follows:

- Low-income energy assistance--$11.1 billion;
- Residential investment tax credits for conservation, and for solar, wind and geothermal energy--$8.7 billion;
- Business and utility tax incentives for investment in conservation and the production and use of alternate energy forms--$16.3 billion;
- Residential heating cost tax credit available to renters and homeowners--$4.8 billion;
- A not-energy-related exclusion of larger amounts of interest and dividends from gross income for personal income tax purposes--$26.9 billion; and
- A not-energy-related easing of property valuation procedures for estate tax purposes--$4.3 billion.

Table 4 summarizes the estimated revenue effects of the House and Senate versions of H.R. 3919 for calendar years 1979-1990.

TABLE 4

ESTIMATED REVENUE EFFECTS OF HOUSE AND SENATE VERSIOMS OF H.R. 3919, CALENDAR YEARS 1979-90
(millions of dollars)

	Total 1979-1990
House Bill:	
Windfall Profit Tax	276,821(a)
Senate Amendment:	
Windfall Profit Tax	177,827
Residential Energy Incentives	-8,668
Business Energy Incentives	-17,002(b)
Home Heating Credit	-4,045
Repeal of Carryover Basis	-4,302
Interest and Dividend Exclusion	-26,941
Total, Senate Amendment	116,069

(a) Funds to be deposited in an Energy Trust Fund.
(b) These totals include $6 million revenue effect from 1978 liabilities.
Note: A small amount of revenue is obtained in 1979 because it is assumed that it will have the effect of reducing intangible drilling deductions in that year.
Source: Joint Committee on Taxation, Conference Comparison on H.R. 3919 (Crude Oil Windfall Profit Tax Act of 1979), December 18, 1979, p. 47.

Legislation As Passed

Size and Duration of the Tax. The Conferees decided to split the difference between the revenue yields of the two Houses for 1980 through 1990 ($276.8 billion for the House of Representatives and $177.8 billion for the Senate), arriving at a figure of $227.3 billion. Subsequent agreements, however, required an adjustment of this figure to $227.7 billion.

As passed by the respective Houses, the tax would have started on January 1, 1980. In the House bill, the tax on all other than newly discovered and tertiary would have been permanent, and thus has an unlimited revenue yield. The Senate bill provided for a phase-out procedure triggered by a specified revenue yield.

The combined result of agreements in early and late February 1980 was to begin the tax on March 1, 1980, instead of January 1, 1980, and to phase out the tax over a 33-month period, starting in January 1988 or in the month after cumulative net revenues received as a result of the tax reached $227.3 billion, whichever is later. But the phaseout would start no later than January 1991, and the tax must end by September 30, 1993 regardless of whether it has raised the targeted $227.3 billion. (As noted above, the $227.3 billion figure was subsequently revised to $227.3 billion.)

Tax Structure and Rates. In January, 1980, debate on how to scale the tax structure and rates to obtain the compromise figure focused largely upon the size of any exemption or other break to be given small producers ("independents") and the desirability and practicality of setting relatively low rates on newly-discovered, tertiary, and heavy oil. Under the House bill, independents received no special treatment, whereas the Senate exempted their first 1,000 daily barrels of production from the "windfall" tax. The respective provisions for taxation of the various categories of production can be seen in Table 2.

An agreement on the above matters was reached January 22, 1980, and subsequently amended slightly. Final and complete Conference agreement was reached February 26, 1980; the Act was signed into law April 2, 1980. The main features of the final agreements on the tax structure were as follows:

- Old Tier 1 is merged into old Tier 2 to form a new Tier 1; a tax rate of 70 percent is imposed on it, and the base price set at $12.81, adjusted for inflation;

- "Stripper" oil and oil produced from a National Petroleum Reserve in which the U.S. has an economic interest are combined in a new Tier 2, which is taxed at 60 percent and assigned at base price of $15.20, adjusted for quality and location differences and for inflation;

- Newly discovered oil (oil discovered since January 1, 1979), certain heavy oil, and incremental tertiary oil are combined in a new Tier 3, to be taxed at 30 percent and assigned a base price of $16.55, adjusted for quality and location differences and inflation plus 2 percent per year;

- Reduced tax rates are established for independents' first 1,000 daily barrels of production of Tiers 1 and 2 (50 percent on Tier 1 and 30 percent on Tier 2), prorationed according to total production in each category eligible for reduced rates. Given these rates, independents would pay about $23 billion of the total revenue target;

- Oil from Indian land is exempt from the tax, as is oil produced by State and local governments if the proceeds are used for a public purpose;

- That part of Alaskan North Slope oil produced from the Sadlerochit Reservoir on Prudhoe Bay is taxed as Tier 1, except that the base price is adjusted upward to reflect decreases in the Trans-Alaska Pipeline System tariff below $6.26. Other oil produced north of the Arctic Circle is exempt;

- The windfall profit subject to the tax is reduced by the amount of State severance taxes on the windfall profit; and

- Base prices will be adjusted for inflation occurring after the second quarter of 1979, but lagged by two quarters, with the GNP deflator used as the measure of inflation.

Residential Energy Tax Credits. A substantial number of details regarding residential energy tax credits were agreed upon, only some of which are noted here.

- The principal residence requirement under current law is retained;

- Landlords are not permitted eligibility for the residential energy tax credit, but will continue to be eligible for the business energy investment tax credit;

- The tax credit for solar, geothermal, and wind wind energy property is increased to 40 percent of the first $10,000 of expenditures, from 30 percent of the first $2,000 and 20 percent of the next $8,000;

equipment used to generate electricity from these renewable energy sources is made eligible for the credit;

- No items were added to the list of property eligible for energy credits, and specific standards were set for the Secretary of Treasury to apply when exercising authority to add new items;

- Qualified expenditures and the expenditure limits per dwelling are reduced to the extent that property is financed by grants or subsidized energy loans. In the cases of joint ownership, the credit is available separately for the expenditure made by each taxpayer.

Business Energy Tax Incentives. An even larger number of details relating to business energy tax incentives were agreed upon by the conferees, and only some are noted here.

- The tax credit on solar, wind, and geothermal energy property is increased from 10 percent to 15 percent for 1980 through 1985, and solar process heat equipment is made eligible; any refundable features are repealed;

- The 10 percent investment credits for equipment to produce a solid fuel from biomass is extended from 1982 through 1985; and the 10 percent credit for equipment to convert biomass to alcohol for fuel use is extended to 1985 if the primary source of energy for the converting equipment is a substance other than oil, natural gas, or products of oil or natural gas;

- In the transportation area, Senate-bill provisions granting credits for vanpooling, truck aerodynamic equipment, and electric motor vehicles were deleted, but certain intercity buses would get a 10 percent credit through 1985 to the extent that seating capacity is increased; . The existing exemption from the 4-cents-a-gallon excise tax on gasoline allowed blenders of alcohol with gasoline would be extended from 1984 to 1992. Where the excise tax exemption does not apply, gasohol blenders are provided an income tax credit of 40 cents for each gallon of alcohol. Other breaks for gasohol were also agreed upon.

- Subject to various conditions, producers of certain alternative energy sources would get a tax credit of $3 per barrel of oil equivalent adjusted for inflation; the sources are oil from shale and tar sands, natural gas from certain nontraditional sources, synthetic fuels (other than alcohol) from coal, gas from biomass, steam from solid agricultural byproducts, and processed wood;

- Solid waste disposal facilities eligible for financing with tax-exempt industrial development bonds would include certain property used primarily to convert fuel derived from solid waste into steam as long as such property and that used for collection and processing of the waste is owned by the same person. Interest on an obligation used to finance a solid waste disposal facility and a related electric energy facility is also tax exempt under certain circumstances;

- Interest on industrial development bonds used to finance renewable energy property would be tax exempt in States that meet certain legal requirements;

- Small-scale hydroelectric facilities, including those of public utilities, are provided an 11 percent nonrefundable credit. The generating equipment must have an installed capacity of less than 125 megawatts and be installed at the site of an existing dam or at a site that does not involve the use of a dam or other water impoundment structure;

- Under certain conditions, tax-exempt industrial development bonds may be used to finance hydroelectric facilities at existing dam sites or at sites where no dam or other water impoundment is involved;

- A new 10 percent energy credit through 1982 would be provided for "co-generation" equipment added to an existing boiler or burner in which less than 20 percent of the annual fuel consumed is accounted for by oil or natural gas.

Other Provisions. Action was also taken by the conferees on a few other matters, some not related to energy. The energy-related provisions include:

- Assistance to lower income families for heating and cooling costs is provided by means of an authorizing of $3.115 billion for fiscal year 1981 (through block grants to States) and a general statement of intent that 25 percent of all WPT revenues will go to aiding lower income households;

- It was agreed to remove the President's authority to impose oil import quotas whenever Congress has passed a joint resolution disapproving such a quota. The President could veto the resolution, but the veto could be overridden by a two-thirds vote of both Houses.

- Taxpayers who liquidate their LIFO inventories, in response to a Department of Energy regulation, request or to a major foreign trade interruption, may apply for a refund of taxes paid on the LIFO inventory profits of such sale if the liquidated inventory is replenished within three years;

General Allocation of Revenues. The net revenues from the WPT from 1980 through 1990 under present price assumptions are to be allocated to a separate account of the Treasury, for accounting purposes only, as follows:

- Aid to lower income households--25 percent of net revenues;
- Income tax reductions--60 percent of net revenues;
- Energy and transportation programs--15 percent of net revenues.

Of revenues in excess of what is projected, one-third would be used to provide aid to lower income families and two-thirds for income tax reductions.

Subsequent and Pending Actions

After enactment of the Crude Oil Windfall Profit Tax Act of 1980, some of the parties affected by the Act began to move for changes in or repeal of the law. There were two main thrusts: (a) complaints by "small" owners and/or operators of oil producing properties, many of modest means, that they should not be subject to the same tax rates as the large oil companies; (b) activities by producer or State organizations aimed at challenging the law itself on constitutional grounds, and/or challenging the manner in which the law is being implemented.

Royalty Owners. Essentially, the Act subjected a royalty owner to the WPT the same way it does integrated companies. Royalty owners include any owners of economic interests in oil properties that are defined as royalties for income tax purposes. These include net profits interests, landowner royalties, overriding royalties, and similar interests. They pay their share of the tax (proportionate to their interest) by receiving a smaller amount from the payer of the "royalty"--usually the company that is producing the oil. The company withholds the tax in much the same way that an employer withholds employees' Federal income tax.

In most cases, royalty and similar interests are not eligible for the reduced windfall profit tax rates afforded independent producers. Many royalty owners, however, qualify for the percentage depletion allowance, and can compute the deduction on the full price of the oil (including the "windfall profit" element). Integrated oil companies are prohibited from using percentage depletion deductions.

Because the tax provisions of the Act were made effective March 1, 1980, royalty owners began to feel the impact of the tax on their royalty earnings as soon as royalty statements and checks for March oil production started arriving in early to mid-April.

In late June, 1980, the Senate Finance Committee voted to recommend that royalty owners be given a tax credit (or refund) of up to $1,000 against the windfall profit tax on the removal of royalty oil during calendar year 1980. The credit would be available only to individuals, estates, and family corporations, and not to other corporations or trusts. To compensate for the revenue loss in FY81 that would result from the tax credit, the otherwise applicable base prices for each calendar quarter in FY81 would be adjusted downward by 0.8 percent. These proposals were part of the Finance Committee's recommendations to the Budget Committee in connection with First Concurrent Budget Resolution for FY81. The measure was adopted by the full Senate on July 23, 1980.

The House's version of the First Concurrent Budget Resolution (passed on September 4, 1980), had no provision related to oil royalty owners, low volume oil wells (see below), or the inflation adjustment. Reconciliation of the respective measures in conference committe resulted in agreement to give royalty owners (as delineated in the Senate measure) the $1,000 tax credit (or refund) for 1980, but to make no changes regarding low volume wells or the inflation adjustment. This agreement was part of the Omnibus Reconciliation Act of 1980 (P.L. 96-499), enacted December 5, 1980.

The claim of royalty owners for easier treatment under the WPT than afforded oil companies illustrates the different objectives of the Windfall Profit Tax Act and of national energy policy. A prime motivation for the tax is the concern that higher energy prices resulting from decontrol of domestic oil will redistribute income from low and middle income groups to oil company stockholders and other owners of oil producing properties. Another important motivation is the desire to use some of the additional revenues from decontrol for public purposes-largely energy-related. However, it is also a goal of national energy policy to reduce the nation's dependence upon foreign oil through increases in domestic oil production and to decrease petroleum consumption.

The larger the proportion of high-income royalty owners, or the more any partial or total exemption from the windfall profit tax tends to benefit such owners (for example, exemptions covering large dollar amounts of physical volumes), the less consistency there will be with the income distribution objective of the Act. To the extent that royalty owners are not in high income brackets, exemption from the tax may well be consistent with the income distribution objective. Unfortunately, very little, if any, information is available on the income distribution of oil royalty owners, as well as on other characteristics of this group. In either of the above cases, any cut in royalty owner WPT obligations from the present level of course reduces revenues available to finance energy conservation, research on alternative energy sources, or other public goals.

Production From Low Volume Wells. Nearly three-fourths of the oil wells in the U.S. produce 10 barrels of oil per day or less. These generally are old wells whose production has declined over the years as the oil or pressure remaining in the reservoirs they tap has decreased. As a group, these "stripper" wells account for about 14 percent of total production. It was argued that there is greater benefit from keeping them operating than their volume would seem to indicate. Once closed up it is virtually never economical to reopen one, and the potential production is lost. In addition, the equipment of these wells is generally old and subject to frequent breakdowns.

In an attempt to prevent or delay closure of the smallest of these wells (in terms of production) and to provide some tax relief to their owners and operators, the Senate also voted on July 23, 1980 to fully exempt from the WPT the first two barrels per day produced from stripper wells.

Legal Challenge. Because the windfall profit tax applies to the first sale of a resource that is unevenly distributed geographically, the tax will not be distributed uniformly on a geographic basis. Also, it is possible that the complexity of the tax structure and related energy price regulations together with the diversity of owner and operator arrangements will make administration of and compliance with the law difficult.

In May 1980 members of the Independent Petroleum Association of America (the national association of independent oil producers) voted to challenge in court the constitutionality and general validity of the Act, and the manner in which it is being implemented, administered, and enforced. The Governor of Texas announced that the State was studying legal action against the law. And, members of the Texas Independent Producers and Royalty Owners Association voted to support as individuals a separate industry effort to challenge the tax in court on constitutional grounds.

On October 14, 1980, a challenge to the Windfall Profit Tax Act was filed in the Federal District Court for the District of Wyoming by the IPAA, thirty associations of oil and gas producers and royalty owners, and several individual producers and royalty owners. They cited the following legal issues: (1) because the Act exempts certain crude oil production from Alaska, it violates the Constitutional clause that requires excise taxes to be levied uniformly (interpreted by the courts to include geographic uniformity); (2) because economic analysis has shown that the tax will decrease domestic oil production, the Act increases dependence on foreign oil and, by defeating the purpose of its adoption, fails to provide due process of law; and (3) that the Act takes private property without just compensation.

Energy Emergency Planning: Gasoline Rationing and the Energy Conservation Act of 1979 (P.L. 96-102)*

Introduction

The lack of a comprehensive plan to address energy emergencies was a concern to many in the 96th Congress, who thought it likely that U.S. petroleum supplies would be disrupted in the future. Despite the strong consensus on the need for a preparedness strategy, however, the Congress struggled with little success to develop a plan that could be endorsed without reservation; agreement was finally reached more in a spirit of exhaustion than enthusiasm. By the time the effort was over, numerous supporters of emergency planning had revised their expectations about the ability of public policy to achieve equity and fairness in a crisis that would impinge so deeply on so much of the society.

Several issues confounded consensus on energy emergency planning: how to assure an adequate supply at an affordable price; what special needs or users should receive priority consideration; when an emergency should be declared, and when it should be deemed over. The 96th Congress struggled with these policy issues as it debated proposed standby gasoline rationing plans, but these same issues would be posed by any plan for the management of any energy emergency by Government regulation.

As required by the 1973 Emergency Petroleum Allocation Act (P.L. 95-159), Congressional attempts to deal with energy emergencies have been preoccupied with assuring "equitable" distribution at "equitable" prices "among all users." Two years later, the Energy Policy and Conservation Act (P.L. 94-163) which authorized development of a rationing plan, retained the emphasis upon "equity" as a funding principle of Federal emergency energy planning. However, as the 96th Congress discovered, allocating supply or assigning end-users rights of any products in short or finite supply does not increase the size of the pie, but merely changes the size of one's slice. What was perceived as "equity" for one group tended to be "discrimination" against another. For a commodity as essential and pervasive as gasoline, adjudicating equity in advance of an emergency proved to be an almost insoluble policy question. The history of the 96th Congress's work in this area is a graphic demonstration of this fact.

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The Energy Policy and Conservation Act, enacted in December 1975, required the development of contingency gasoline rationing and other plans to conserve energy in an emergency. These plans were to be submitted to Congress for approval as standby measures. Once approved as a standby measure, the law required Congressional approval before a rationing plan could be implemented. Other conservation measures--once approved by Congress as standby measures --could be implemented by Presidential action.

The law required development of the rationing plan within 180 days of enactment, but it was more than three years before a plan was transmitted to Congress. A plan submitted by the Ford Administration just before it left office was never officially received by Congress, and was promptly withdrawn by the Carter Administration, which preferred to develop its own. However, it was not until June 22, 1978, that a proposed plan was released. Hearings on the proposal were held around the nation by the Department of Energy during late July and August 1978. The final rule for a standby gasoline rationing plan was released by DOE on February 26, 1979, and the plan was formally transmitted to Congress on March 1. Three conservation contingency plans were submitted with the rationing plan. They provided for (1) maximum thermostat settings in nonresidential buildings; (2) weekend service station closings; and (3) restrictions on out-door advertising lighting.

Only one of the proposed contingency plans was approved, and in May 1979 the rationing plan was disapproved by the House. Challenged by the White House to develop its own emergency energy conservation plans, Congress in late 1979 enacted the Emergency Energy Conservation Act (EECA, P.L. 96-102). The EECA required the Administration to develop another rationing plan, and amended the process by which Congress would consider and approve the plan, in effect making it more difficult for Congress to disapprove it. The legislation also included a separate title outlining a more active role for the States in developing individual plans for meeting conservation targets during shortages. The debate over gasoline rationing and development of EECA are the principal topics of this section.

Standby Gasoline Rationing Plans: Major Issues

In March 1979, the Carter Administration transmitted a proposed rationing plan to Congress. Though this version would be rejected in the House later that year, the basic design of the plan was incorporated into subsequent drafts of the plan, including the one sent to Congress in June 1980 that was subsequently approved.

Under the proposed plans, ration checks would be mailed or issued quarterly at designated points. Drivers would present ration coupons at service stations; the coupons would, in turn, be redeemed for fuel by service stations with their suppliers. The ration checks would pass up the supply line until the principal suppliers--refiners or importers--would report to the Economic Regulatory Administrator (ERA) the volume of gasoline sold and would submit a "redemption check" in that amount.

Perhaps the most innovative feature of the plans was that they allowed a "white market" in ration coupons. Individuals, firms and other gasoline consumers would be fully permitted to purchase or to sell ration rights in an unregulated market. This would reduce the need for administrative personnel to handle hardship appeals and applications for supplemental allotments.

States were further provided with a State Ration Reserve for the issuing of hardship or supplemental allotments to be awarded by local rationing boards. A National Ration Reserve would also be established to provide the Department of Defense with necessary allotments consistent with maintaining national security.

Public hearings were held on rationing plan designs by the ERA in Washington, D.C., and throughout the country during mid-1978, and many Congressional hearings were held on the proposed plans. Major issues raised at these hearings included:

(a) Whether ration allotments should be adjusted to allow for variations in average annual vehicle fuel consumption among States. In the release of the proposed plan in June 1978, DOE solicited comment as to whether allotments to States should vary to account for differences in average annual vehicle fuel consumption among the States. Generally, average vehicle fuel consumption is highest in agrarian States. In response to criticism that the final plan made no allowance for any such variation, Deputy Secretary of Energy John F. O'Leary testified before the Senate Subcommittee on Regulations on February 28, 1979, that the same variations which exist between States also exist within States, and that the interests of sharing any shortage equitably would not be served by varying the allotment to the different States.

However, the House begged to differ with Mr. O'Leary. The defeat of the first version of the plan in the House can be attributed to a broad feeling in the House that allotments to vehicle owners should reflect differences in average annual fuel consumption between States. The Emergency Energy Conservation Act, enacted after the defeat of the first plan, specified that a rationing plan should provide that the "degree of shortfall" would be shared equally among end-users in the various States. The original plan had provided that a national pool of available gasoline would be divided equally among individual motorists after supplies for national and State reserves and primary uses had been drawn from the national pool.

The revised plan submitted after passage of EECA provided that a national reserve and a set-aside for priority agricultural uses of gasoline would be drawn from the national pool. The remaining estimated available supply would then be divided into fifty individual State pools proportionate to the relationship of State base period use to national base period consumption. From the State pools, supply would be designated for non-agricultural prirority uses and for a State Ration Reserve. The balance of the State pool would be assigned to vehicle owners.

(b) Whether ration allotments should be based upon drivers' licenses or vehicle registrations. Testimony and opinion were divided as to which basis for the allotments would be the fairest and the least susceptible to fraud. In part, the Administration favored allotments based upon vehicle registrations because the number of employees licensed to drive would be no indicator of a firm's real need for fuel. Allotments could be made to firms and businesses more quickly in a time of national emergency on the basis of vehicle registrations than upon drivers' licenses. Allocations would otherwise have to be based upon historic or base-period consumption, which could delay implementation.

One objection to basing allocations on vehicle registrations was that it could favor wealthier families who shared more cars among fewer users.

DOE concluded that allotments based upon vehicle registrations would not disproportionately disfavor any income group, and would minimize income transfer between groups for purchases of additional coupons. Research indicated that lower income groups would fare best under a licensed driver allotment system because lower income groups tend to have a higher number of drivers per registered vehicle, and would receive more coupons than they needed (and which they could sell). But DOE found that the income transfer would fall heavily upon middle income as well as upper income groups. Under a vehicle-based system, the burden for additional coupon purchases would fall most heavily upon upper income groups, while lower income groups would receive sufficient gasoline to meet their needs and still earn some income (though less than under a license-based system) from coupon sales.

It is worthwhile to note the argument of some that ration allotments to either owners or license holders unfairly penalizes those who conserve gas by neither driving nor owning a vehicle, and that allotments should be based upon the ability to drive or own a car and not the fact of doing so. If vehicle owners or license holders may derive supplemental income from selling ration coupons, it seems unfair to some that non-consumers of gasoline should be denied the same opportunity. Some individuals, for example, may belong to carpools but not own vehicles themselves. These individuals, if given an allotment, could contribute their coupons to the carpool.

(c) Whether allotments to vehicles in the commercial and industrial sector should be indexed. The Carter Administration originally proposed that vehicles used in commerce would receive the standard allotment for that particular vehicle type and that firms would then have the option of applying for supplemental allotments or purchasing additional ration rights in the "white" market. The revised plan of December 1979 provided that allotments to firms would initially be based upon vehicle registrations until data on base period consumption could be processed. In response to comments urging that a base period system be implemented at the outset for awarding allotments to firms, the final version of the plan promised to institute some mechanism for firms to report base period gasoline consumption in advance of any need for rationing.

(d) How the needs of priority and special users should be met. The Administration's plan defined priority firms as emergency service (law enforcement, fire, emergency medical, and snow removal), sanitation services, and public transportation--whether public or private--including school buses but excluding taxicabs. "Designated" firms, eligible for supplemental allotments, were those with significant off-highway vehicle gasoline consumption--notably, agricultural, construction, and mining operations--but additional firms could apply for designated status in instances where allotments differed radically from actual requirements. The narrative account of the plan assured that allotments for off-highway vehicles and equipment used in agricultural production "will be provided in a timely manner, and in amounts adequate to meet food and fiber production goals."

Recreation vehicles were excluded from receiving any allotments under the plan proposed in June 1978, but were granted the same allotment as passenger automobiles in the March 1978 and June 1980 proposals. The Recreation Vehicle Industry Association had argued that recreation vehicles do not account for a disproportionate amount of so-called "non-essential recreational driving," and that singling out this classification contravened the sense of the Emergency Petroleum Allocation Act, which required that any allocation plans provide for "equitable" distribution among all users. Given the comparatively low fuel efficiency of recreation vehicles, owners would likely need to use the "white market" more than passenger car owners, if given the same allotment as passenger car owners.

The International Taxicab Association argued that the exclusion of taxicabs from "priority" status was inconsistent with the need to maintain alternative transportation services during a severe fuel shortage. The Association also argued that the sluggishness of the taxicab rate-setting process would make it impossible for the industry to recoup the cost of purchasing additional coupons on the "white market," and that securing the quantity of coupons that would be required would be an overwhelming task.

In the final version of the plan, additional priority users were designated and some definitions extended in the new version of the plan. Priority classifications would include: (1) emergency services; (2) sanitation services; (3) public passenger transportation, including taxicabs; (4) energy production; (5) the Department of Defense and defense activities; (6) foreign mail and small parcel transportation and delivery; (7) agriculture (including production, distribution of products, and commercial fishing); (8) short-term vehicle rental; (9) newpaper distribution; and (10) other activities that could be designated by DOE.

(e) Whether priority allocations for agricultural gasoline consumptions should be a national or State responsibility. The plan proposed in March 1979 would have provided that supplemental allotments for priority class activities would all have been subtracted from the national pool of ration rights. In complying with the congressional directive in EECA that allotments to motorists would reflect differences in State gasoline consumption, DOE proposed in December 1979 to create fifty individual State pools. DOE further proposed that supplemental allotments for priority activities within each State would be drawn from that State's pool of ration rights.

In thus attempting to satisfy the congressional directive to assure equality, DOE risked even greater inequalities, especially in States where the percentage of agricultural gasoline consumption to total State gasoline consumption was significant. The final version of the plan provided that the priority allotment for agricultural gasoline consumption be drawn from the national pool before the remaining ration rights were divided into individual State pools. Additional designations of ration rights for nonagricultural priority activities and for supplemental allotments to commercial businesses and firms within a State would then be drawn from the State pool. 1/

1/ The potential impact of meeting priority allotments for agriculture from the State pools--as proposed in the December 1979 revision but dropped in the final proposal--was quantified in an analysis prepared (continued)

(f) When to invoke gasoline rationing or emergency energy programs. One concern with the original rationing proposal was the absence of any clear articulation of when gasoline rationing would be appropriate. Some Members wanted gasoline rationing clearly identified as a measure to be utilized only in severe shortages. A provision in EECA stipulated that the "severe energy supply interruption" necessary to invoke the plan meant a shortage of 20 percent or more of projected daily demand for major petroleum products. Nicknamed the "trigger," the 20 percent shortfall requirement would represent a petroleum shortage of far greater magnitude than any the United States has experienced.

The issues described above were central to the defeat of the March 1979 rationing plan. Although the second plan, submitted in compliance with Emergency Energy Conservation Act, was approved, its approval signified more a desire to get some plan on the books, rather than a resolution of the issues involved. Thus the revisions in the December 1979 proposal, and the plan finally approved in 1980, cannot be viewed as a consensus decision on the form of an emergency rationing plan, but merely a consensus within the 96th Congress and the Carter Administration that a plan of some kind was necessary. The history that follows is graphic proof of this conclusion, tracing the course of the first gasoline rationing proposal, passage of the Emergency Energy Conservation Act (EECA), and the approval of the second plan.

The March 1979 Rationing Proposal

Many of the questions about the proposed plan were not resolved during the 60-day statutory period in which Congress had to consider it. On April 25, 1979, the House Commerce Committee narrowly disapproved the rationing plan; a reconsideration of the vote was anticipated. On April 26, 1979, the Senate Energy Committee approved the rationing plan by one vote (9-8), partly on the strength of an assurance from the Administration that additional allotments would be provided to rural and agrarian states if a rationing plan had to be implemented. That same day, the House Commerce Committee, due to lack of a quorum, was unable to reconsider its vote of the previous day on the rationing plan.

(continued) by the Congressional Research Service. See: Bamberger, Robert. The proposed standby gasoline rationing plan: some potential impacts of priority or supplemental allotments on motorist ration rights." [CRS report] May 14, 1980.

On May 1, the House Commerce Committee failed by a tie vote (21-21) to reverse its earlier vote on the standby rationing plan; however, the Committee then voted (21-20) to report the plan to the full House without recommendation.

When prospects for approval of the standby rationing plan seemed remote and only a few days remained before the statutory deadline, the President proposed an amendment to the plan (Contingency Plan No. 5) on May 7. The amendment restricted allotments to a maximum of three cars per household, and provided that half of the passenger car allocation would reflect differences in "historical usage" between states.

The next day, May 8, the Senate Energy Committee was quite busy. First the Committee voted (10-8) to rescind its vote of April 26th approving the gasoline rationing proposal. Then the Committee voted to reject (15-3) the President's amendment (Contingency Plan No. 5), and voted after that to send the rationing proposal to the floor recommending its defeat (12-6). Several senators expressed opinions that the President's proposed amendment did not satisfactorily alleviate the inequities they perceived in the rationing plan.

Late in the afternoon, the President transmitted another version of the amendment (Contingency Plan No. 6), which retained the provisions in the amendment of the previous day, but provided that the entire allocation to drivers would be adjusted to reflect differences between states in average historical gasoline use.

The Committee reconvened and voted 8-8, effectively defeating the amended plan in committee. However, Senator Church changed his vote to permit the plan to be considered by the entire Senate; the plan was therefore reported from Committee (9-7). The following day, May 9, the Senate approved the rationing plan (58-39).

On May 10, the House rejected the plan (246-159). The amendment to base allocation on historical usage garnered new support for the plan from rural delegations, but alienated support in urban districts. Many Members felt that there had been insufficient time to review and evaluate the amendment proposed.

President Carter responded angrily to the House vote, accused the Members of "political timidity," and stated that the vote had not been a judgment on the merits of the plan but a reflection of local rather than national interests. Under EPCA, the President had fulfilled his statutory obligation by submitting a plan, and was not required by the legislation to submit another plan. He challenged the House to develop a plan of its own within 90 days.

The President, referring to the gasoline lines that were forming as a result of the Iran crisis, remarked that he now had "no authority at all to meet what could be a national crisis"; however, this was not actually the case. A large body of general and standby emergency regulations to allocate products at the wholesaler or jobber level promulgated pursuant to the Emergency Petroleum Allocation Act (EPAA) provided the Administration with a range of actions that could be taken without Congressional approval. 2/ The Administration did not opt to exercise or test the limit of any of these authorities, maintaining that the shortage could be absorbed with a modest conservation effort on the part of consumers.

The Congressional Initiative: The Emergency Energy Conservation Act

Congress made little move to accept the President's challenge in the weeks immediately following the defeat of the first rationing plan proposal. But, as the gasoline shortages worsened during May and June 1979, the Congress expressed some desire to resolve its differences with the Administration over a rationing plan.

Senate Action. The Emergency Energy Conservation Act of 1979 (S. 1030), introduced April 26, 1979, was developed by members of the Senate Energy Committee to provide for meeting national emergency conservation needs during a shortage or emergency without necessarily imposing upon

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2/ There was some speculation that the language of the Emergency Petroleum Allocation Act and the Defense Production Act of 1950 provided the President with authority to order gasoline rationing in the absence of Congressional approval of any proposed rationing plan. Any ambivalency on this point was laid to rest by an amendment to the Defense Production Act included in the Energy Security Act of 1980 (P.L. 96-294)(Section 103): Nothing in this act [The Defense Production Act] shall be construed to authorize the President to institute, without the approval of Congress, a program for the rationing of gasoline among classed of end-users. The amendment also stipulated that no provision of the Act granted (1)...any new direct or indirect authority to the President for the mandatory allocation or pricing of any fuel or feedstock...or electricity or any other form of energy; or (2) grant any new direct or indirect authority to the President to engage in the production of energy in any manner whatsoever...except as expressly provided [in the Act] for synthetic fuel production.

the states a federally implemented plan that might not be appropriate to all states. As proposed, the legislation required development of an emergency national conservation plan within 90 days of enactment and directed the governors of each state to develop conservation measures that would meet the national energy conservation target while fully accounting for local economic, climatic, and geographic conditions. If the states did not develop a plan acceptable to the Administration, the Federal plan could be implemented in that State. The legislation, as passed by the Senate, specifically prohibited the Federal government from restricting weekend sales of gasoline; however, individual states might restrict weekend sales if they choose.

S. 1030, as passed by the Senate, also: (1) prohibited individuals from stockpiling fuels in excess of reasonable need; (2) required development of a plan to conserve energy in the Federal establishment; (3) allowed the states judicial recourse if they felt they were being asked to absorb unacceptable hardship under the Act; and (4) terminated the authority of the Act as of September 30, 1983. Amendments that were proposed but rejected would have: (1) instituted a non-coupon rationing scheme identical to that proposed in H.R. 4283 (described below); (2) prohibited school busing programs for the purposes of achieving racial balance in schools (the amendment was tabled); and (3) provided for congressional review of actions taken by the President under the Act. The Senate passed S. 1030 on June 5.

House Action. On May 31, 1979, the Emergency Gasoline and Diesel Fuel Conservation Act of 1979 (H.R. 4283), sponsored by Representative Toby Moffett, was introduced in the House. The Act required the President to designate emergency energy conservation targets for individual states and the nation as a whole. The States would be required to design conservation plans to meet the statewide conservation goal designated by the President. The State plans could utilize both voluntary and mandatory measures, and would be subject to DOE review to ensure that the plans were not inconsistent with Federal law, would not place an undue burden on commerce, and did not rely upon taxes, tariffs, or user fees.

The proposed legislation also incorporated a plan to restrict the use of passenger cars that had been proposed by Mr. Moffett as a simpler alternative to the standby gasoline rationing plan developed by the Administration and defeated in the House. Failure to meet established conservation targets would trigger the plan, banning the use of each passenger automobile one day per week on a day chosen by the owner of the automobile and identified by a sticker affixed to the car. Emergency, agricultural, and defense vehicles would be exempt, as would taxicabs, rental automobiles, and cars used exclusivley or predominantly for commercial purposes. The House proposal was referred to the Committee on Interstate and Foreign Commerce; however, the Committee focused its attention on S. 1030, which had been referred from the Senate.

The Senate bill left unchanged the EPCA requirement that a rationing plan first be approved by Congress before it could achieve standby status. In the House, the Commerce Committee eliminated this provision and required only that a plan be transmitted at least 30 days before being implemented. The Committee also added a "trigger" before a plan could be implemented: a 20 percent shortfall in crude supplies compared to the previous year would have to occur or be anticipated. Another amendment required a progress report within 90 days of enactment on developing a contingency rationing system. On July 17, the bill was reported to the House, where it encountered nothing but trouble.

On July 25, the full House restored Congressional approval of a standby plan. It rejected an amendment setting the "trigger" at 15 percent shortfall, and another requiring submission of a plan within 180 days of enactment. But the White House reacted angrily to the amendment that did pass, accusing the House of failing to place the national welfare before parochial concerns, and the House leadership withdrew the bill from the floor to gain support for reversing the amendment. On July 31, it was successful: the original Committee language, providing a Congressional vote only on implementation, not on standby status, was approved (234-189).

The next day, the bill was amended further to drop the proposed one-day-a-week driving ban proposed by Mr. Moffett (413-3), and to establish a 1 percent set-aside of middle distillate fuels to meet residential heating needs during a severe shortage (223-187). Other amendments approved provided for monthly monitoring of middle distillate inventories on a statewide basis and required a middle distillate set-aside for agricultural production. The House then approved the entire measure (263-159).

Conference Action. The conferees met during September to resolve the issues of Congressional approval of a standby plan, and of a "trigger" provision.

Recognizing that a one-House veto appeared likely to prevent passages of any plan, the conferees agreed that a plan would be deemed approved by Congress unless both Houses passed a resolution of disapproval within 30 days of submission by the President. The conference bill specified language for the resolutions, which would not be subject to amendment. If the President vetoed the resolutions, the plan would be considered approved unless the Congress overrode the veto.

To prevent a repetition of the confusing flurry of amendments that had accompanied the previous proposal, the conferees prohibited the President from amending his plan during the 30-day review period. After its approval as a standby measure, the plan would be open to amendment again. Amendments would be subject to a one-House veto for a 15-day period.

The conferees retained the House-passed language requiring a 20-percent shortfall for a period in excess of 30 days before the President could order implementation of rationing. However, while the House bill used the 12 months prior to the anticipated shortage as a base, the conference bill allowed the President to choose any 12 consecutive months from the previous 36 months as a base period. It also required that he factor in normal growth in demand for gasoline, heating oil and diesel fuel.

The conference report acknowledged that the data might be imprecise, and that the determination would likely require a "high degree of judgment and exercise of discretion." If it could not be determined with certainty that the shortfall would be 20 percent, the President could nonetheless request implementation of the plan, subject to approval by both Houses. No change was made to provisions in EPCA which provide that either House could veto a Presidential order to implement gasoline rationing.

The conference bill also established guidelines and principles for development of a rationing plan, requiring that coupons be distributed to reflect differences between States in average per vehicle gasoline consumption. An amendment to the House bill requiring that distribution of coupons be based on need was retained, but the conferees acknowledged that this requirement was "general in nature" and noted that State set-asides and local boards would provide more "individual relief." The conference noted that the next proposal would have to be more detailed than the plan transmitted in March 1979 if Congress were to be able to evaluate whether the new proposal satisfied the statutory requirements concerning coupon distribution.

In addition to the rationing provisions, EECA contained provisions dealing with Federal and State emergency energy conservation planning, and other energy conservation measures. These provisions are discussed later in this section.

The bill was reported from conference on October 12 and passed by the Senate on October 17 (77-18). The House passed S. 1030 on October 23 (301-112), and the bill was signed into law (P.L. 96-102) on November 5, 1979.

Revised Standby Rationing Plan (June 1980)

Pursuant to EECA, the Economic Regulatory Administration released a revised version of the rationing in December and sent a final proposal to Congress in June 1980. 3/ The revision was largely similar in conception to the March plan; however, there were some differences, noted earlier, in the designation of priority users, in the determination of allotments to the commercial and industrial sector, and in the treatment of priority needs for agriculture. The revised plan also provided a more detailed picture of the role which the State and local bodies would plan in administering the State Ration Reserve and reviewing hardship applications. State government would be required to submit plans to DOE describing how local and regional duties would be managed to comply with the requirements of EECA. The plan assumed that local rationing boards would be staffed with volunteer labor, an expectation that may have been a trifle optimistic.

The revised plan was accompanied by more extensive supporting information than the March proposal, responding to Congressional curiosity about:

(1) Likely Cost of a Coupon: DOE estimated that in a 20 percent shortfall (with an estimated base price for gasoline rationing), a coupon would likely be worth $1.70. This would imply a real cost for gasoline of $2.93 to "clear the market"--to reduce demand so that it equaled supply. The value of the coupon would vary, of course, with changes in the base price of gasoline and the elasticity response. 4/

(2) Estimates of the Average Allotment: DOE speculated that the average allotment to vehicle owners nationwide would be roughly 42 gallons a month, assuming: (a) a 20 percent shortfall in gasoline, home heating or diesel fuel; (b) agricultural gasoline consumption held to 90 percent of base period consumption; (c) firms and businesees held to 80 percent of base period consumption. The allotments in specific States would vary, of course, with (a) the nationwide per vehicle average; and (b) variations in drawoffs from the State pool (i) for the State Ration

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3/ Notice of proposed rulemaking and public hearings. Standby gasoline rationing plan. Federal register, December 10, 1979. v. 44, no. 238: 70799-70858.

4/ See U.S. Department of Energy. Economic Regulatory Administration. Office of Regulations and Emergency Planning. Progress Report to Congress on the Standby Motor Fuel Rationing Plans. June 1980. DOE/RG-0038. p. 4-1--4-10.

Reserve; (ii) for non-agricultural priority uses; and (iii) for supplemental allotments for commerce and firms. 5/

(3) The Cost of Pre-Implementation, Implementation and Operation of the Plan: Cost estimates for the March 1979 rationing plan included pre-implementation costs of $105.2 million, implementation costs in the event of a supply emergency of $119.1 million, and quarterly operating costs of $175.9 million. However, witnesses testified at hearings held during summer 1979 that it would be impossible for the States to bear the costs of administering the plan at the State level. Subsequent estimates reflected the allocation of funds to the States to meet those costs.

When the final amended plan was released in June 1980, pre-implementation costs had remained roughly flat at $103 million. Costs of maintaining the system in readiness-maintenance were estimated to range between $25-$39 million dollars annually. Costs to activate the system were set at $463.8 million dollars, and operating costs estimated at $474.4 million per quarter. Pre-implementation, mobilization, and operation of the plan for three calendar quarters would thus cost roughly $2 billion. Informally, however, DOE officials acknowledged that there would be little surprise if it proved in practice to be measurably more expensive. 6/ Pre-implementation of the plan was estimated to take between 12 and 15 months. DOE estimated that it would take 90 days to mobilize the system.

The Energy Policy and Conservation Act prohibited use of a tax to limit consumption, but did allow a user fee to "the extent necessary to defray the cost of administering the rationing contingency plan" or to provide for the initial distribution of ration rights. Pre-implementation and readiness-maintenance costs would be absorbed entirely by the Federal government. Implementation and operating costs would require Federal authorizations but would be offset by government sales of ration rights and/or imposition of a user fee on the sale of each gallon of gasoline. It was estimated originally that the user fee would be 1.5 cents per gallon, but in June 1980 the estimate had risen to about 3 cents per gallon to cover operating costs.

5/ Ibid., p. 3-1--3-6. See also: Bamberger, Robert. The proposed standby gasoline rationing plan: the difficulty of precisely estimating statewide ration allotments. [CRS report] June 26, 1980.

6/ See, for example: U.S Congress. Senate. Committee on Energy and Natural Resources. Subcommittee on Energy Regulation. Department of Energy's Proposed Standby Motor Fuel Rationing Plan. (96th Congress, 2d session) Hearing held January 28, 1980: p. 8.

From time to time, some Congressmen suggested that the nation implement gasoline rationing as soon as possible to reduce consumption while supplies remained relatively secure. But in its report to Congress on the plan, DOE argued that rationing would be difficult and cumbersome, concluded that it "can be justified only as a response to a severe gasoline shortage--and even then only if a better alternative cannot be identified." 7/

Hearings on the Revised Plan. The House Subcommittee on Energy and Power held hearings on the proposed rationing plan on June 23 and June 27, 1980. The witnesses were virtually unanimous in their opposition to the specific proposal, including one witness who nonetheless favored the implementation of some form of rationing.

A representative of the American Bankers Association in particular, was critical of the DOE's estimate that 60,000 coupon issuance points would be adequate in the beginning, noting that number roughly corresponded to the number of commercial banking institutions. Warning of serious manpower problems and congestion at banks, the Association described the Administration's assumption that 160 million ration rights checking accounts could be handily opened as "absurd."

Another critic was Representative Daved Stockman, who argued that rationing would be futile without price controls because the marketplace would respond immediately to a severe shortage. Prices would "explode" and "demand will be forcibly curtailed through sheer economic pressure" before rationing could be implemented, he said. The real issue, he suggested, was not the merits of a specific plan, but whether the United States could impose, in a matter of days, a comprehensive price control and allocation system on the entire purchase and distribution chain for crude and products. 8/ Despite the criticism, on July 1, 1980, the subcommittee approved the proposed plan by defeating a resolution of disapproval by a vote of 12-8. Hearings were also held in the Senate. The Senate Energy Committee did not vote on a resolution of disapproval as did the House Committee.

7/ DOE. Progress Report. op. cit. p. 2-11.

8/ Stockman, David. The hare and the tortoise: why coupon rationing will not work in an emergency. Remarks in the House. Congressional record [daily ed.] June 27, 1980. H5828-H5831.

Approval of the Plan. The procedure established in EECA for Congressional review provided for a privileged motion to discharge the committees from further consideration of the plan. If the discharge motion in either House failed, the plan would be approved.

Motions to discharge were introduced on July 30, the final day (in the absence of congressional action disapproving the plan) before it would be considered approved as a standby measure. In the House, the motion was introduced by Representative Clarence Brown and in the Senate by Senator Charles Percy.

Senator Percy argued that the plan was too expensive and cumbersome, and could not be implemented before crude and product prices would rise in response to the emergency. Senator Henry Jackson argued in response that Congress should approve the plan and then develop alternatives. The motion to discharge was defeated by a two-to-one margin (31-60) effectively giving congressional approval. Similar arguments were exchanged in the House, where the motion was defeated by a much closer vote--205-209.

Following approval of the plan, the Department of Energy created a Gasoline Rationing Project Office and appointed a Special Administrator for Gasoline Rationing to further develop the plan during pre-implementation.

The approval of a plan did not bring an end to the debate over either the design of a gasoline rationing plan or the appropriate time to rely upon rationing, either as an emergency measure or as a demand management policy. But some consensus emerged from the debate. It was abundantly clear that both the legislative and executive branches found rationing a distasteful option which they would be loth to see implemented.

Some alternatiaves to coupon rationing were discussed in the 96th Conress. The proposal given the greatest attention was S. 2570, the Emergency Motor Fuel Demand Rationing Act," introduced by Senator Bennett Johnston on April 16, 1980. The legislation authorized a fee [tax] on gasoline that would be rebatable to consumers for some number of gallons: a percentage of that individual's or class of user's normal consumption. If, for example, an individual motorist's gasoline consumption was normally 16 gallons weekly, and it was determined that personal gasoline consumption should be cut be 50% during a severe shortage, the individual would be entitled to receive a rebate equal to the tax on 8 gallons. The fee would, in effect, significantly tax gasoline purchases in excess of what was determined to be the motorist's or user's fair entitlement to gasoline.

Under the proposal, the Department of Energy would determine the market-clearing price for gasoline under some assumption of what the magnitude of the shortage would likely be. The tax would be the difference between the estimated market-clearing price and the base price for gasoline. The refund would be distributed through a decrease in federal withholding, as an addition to social security payments, or through some similar channel. The fee could be adjusted so that the price would clear the market of available supply.

At a June hearing by the Energy Committee on the bill and its companion, S. 2754, most witnesses agreed that there was little cost difference to the consumer between the tax scheme and a coupon system tax that would likely be using the white market concept. The tax might be simpler to implement, but it was not without problems. Most concerns centered about developing some mechanism for rebating the tax promptly to reduce the potential macroeconomic impact of withdrawing so much cash (estimated to fall between $200-$500 billion annually) from the economy. A related concern was devising some means to discount the impact of the tax on the Consumer Price Index and economic programs that are indexed to the CPI. Witnesses also suggested that Congressional approval of an authority that would permit the President to levy a tax of $2-$5 in emergencies seemed unlikely, given the reception of Congress to the proposed 10-cent oil import fee during 1980. A few noted that it would probably be more effective to institute a graduated conservation tax on gasoline with provision for adjusting the tax in time of emergency to induce sharp demand reductions. 9/

Energy Conservation Contingency Plans (March 1979)

The Energy Policy and Conservation Act, in addition to calling for a standby gasoline rationing plan, also authorized the President to develop energy plans "... which [impose] reasonable restrictions on the public or private use of energy...necessary to reduce energy consumption."

President Carter submitted three conservation proposals to accompany the rationing plan in March 1979. Unlike the rationing plan, a conservation plan, once approved by Congress as a standby measure, could be implemented without further Congressional review if the President found that it was "required by a severe energy supply interruption"

9/ Emergency Motor Fuel Demand Rationing Act of 1980. Hearing before the Subcommittee on Energy Regulation of the Committee on Energy and Natural Resources. 96th Congress, 2d session, on S. 2754. Hearing held June 2, 1980. Publication No. 96-120.

or to meet U.S. obligations under International Energy Agency oil-sharing agreements. 10/ The proposals included:

(1) Weekend Gasoline Sales Restrictions. Sales could be limited, for all or a portion of the period beginning Friday noon until midnight Sunday, to emergency vehicles, common carriers, commercial passenger carriers and marine craft, and heavy construction and farm equipment. DOE estimated that savings would average between 171,000-327,000 barrels per day.

Assuming a 15 percent shortfall in crude availability and a depressed economy, DOE estimated that the impact of weekend curtailments for 9-months would be a net improvement of $7 billion--$9 billion lost by industries dependent on weekend activities, but $16 billion gained by the utilization of the fuel in other settings.

(2) Building Temperature Restrictions. This program would mandate maximum thermostat settings of 65 degrees for heating, minimum settings of 80 degrees for space cooling, and hot water settings of 105 degrees maximum. Hotels and motels, hospitals and buildings where specific temperatures were required would be exempt.

DOE estimated a total petroleum savings of 364,000 b/d were the plan imposed--113,000 b/d in direct savings and 251,000 in indirect savings from reduced generation of electricity, with an improvement in GNP of $22 billion in 1977 dollars in 9 months.

(3) Advertising Lighting Restrictions: Savings from this plan could be only about 4,000 barrels per day, but it would be a symbolic indication that nonessential utilizations of energy should be discouraged in an emergency situation. The plan would restrict lighting of advertising signs beyond those necessary to identify an open business or to inform customers of products or services provided by the business. The economic impacts of the plan were considered minimal.

Only one of the three proposals, the building temperature restictions, was approved by the Congress; the other two were sharply criticized. At hearings before the Senate Energy Subcommittee on Energy Regulation, a number of

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10/ A "severe energy supply interruption" is defined in EPCA as a shortage (a) of "significant scope and duration, and of an emergency nature;" (b) likely to "cause major adverse impact on" the national safety or economy; and (c) resulting, or likely to result from deliberate interruptions in the supply of imported petroleum, from sabotage or an Act of God.

witnesses attacked the week-end closing plan for its inevitable damage to the tourist industry. Another witness, from the National Oil Jobbers Council, pointed out that few service stations would stay open merely to serve "emergency vehicles," and those that wanted to would probably be sold out if the shortage were serious enough to invoke the plan. The restriction on outdoor advertising lighting was attacked on the basis of its meager contribution to energy saving. Neither the weekend closing plan nor the outdoor lighting restriction was reported out by the House Commerce Committee. The resolution approving the outdoor lighting restriction was reported to the Senate by the Energy Committee, but it was defeated on the Senate floor by a vote of 24-70.

The building temperature plan was approved by the Senate on May 2, 1979, (89-3), and by voice vote in the House May 10. President Carter had said he would use the authority granted to him, and by July 16 the final rules went into effect. They were subsequently extended to mid-January 1981.

The reluctance of the Congress to authorize energy use restrictions at the Federal level, particularly fervent in the case of gasoline rationing but also present in these less drastic proposals, led to suggestion that conservation initiatives could be more effective and equitable if developed at the State level. This approach was embodied in EECA, which, along with mandating preparation of a rationing plan, authorized a major new emergency energy conservation initiative, initiated and implemented by the States.

State and Local Conservation Plans

Title II of EECA authorizes the President to establish "percentage reductions" in the consumption of specific fuels in short supply, on a State by State basis. The President was granted considerable latitude in determining State consumption, while taking into account priority uses (such as agriculture, safety, and welfare), conservation initiatives already undertaken by the State, climatic condition, and other variables.

The States were required to submit Statewide emergency energy conservation plans within 45 days after the publication of an energy conservation target for that State. The Secretary of Energy would have to approve or disapprove plans not more than 30 days after their submission.

The President was also required to develop a Federal plan to be imposed upon a State if it did not develop a satisfactory one of its own. All or part of the federally imposed plan could be replaced, however, if the State subsequently developed its own plan and DOE approved it. The

Federal plan could not require weekend closings of service stations, but States could adopt that option in their own plans.

EECA also established authority (granted originally on an emergency basis in Spring 1979) for governors to set minimum gasoline purchases. And it modified the one plan that was approved under EPCA, the building temperature restrictions, to allow State and local authorities to exempt individual buildings if equivalent energy could be saved by some other means. 11/

Following passage of EECA, the Department of Energy published a proposed Standby Federal Conservation Plan, 12/ and followed its mandate to "encourage" States to prepare conservation plans prior to an emergency by setting voluntary targets for reduction of gasoline consumption. To a large extent because of rapidly rising gasoline prices, most of the voluntary targets were easily met without the implementation of energy conservation measures. Progress toward the preparation of State emergency plans was slow, however. A September 1980 report of the House Government Operations Subcommittee on Environment and Energy, following a hearing that month, noted that only Nebraska had submitted a plan to DOE and only two others had completed plan designs. Although 25 States reported having started on their plans, a witness from the National Conference of State Legislatures said that "most States have made little progress toward preparedness for another major...shortage." 13/

The Subcommittee concluded that lack of funding by DOE for the State efforts was the primary reason for the delay. But it noted that DOE had failed to evaluate the Nebraska

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11/ EPCA had already provided that a State might be exempt from a Federal Conservation Contingency Plan regulation if it had a comparable conservation program or if these were extenuating circumstances (Sec. 202(b)). EECA, dealing specifically with building temperatures, allowed exemption on a building-by-building basis if substitute measures ~~were~~ adopted that would conserve "at least as much energy as would be conserved by such Federal measure." (Sec. 213(e)).

12/ Federal Register, February 7, 1980, pp. 8462-8488 (vol. 45 No. 27).

13/ Emergency Energy Conservation Programs: Department of Energy Oversight. Twenty-Second Report by the Committee on Government Operations. 96th Congress, 2d session. House Rept. No. 96-1416. September 26, 1980. 24 p. Hearings to be published.

plan that had been submitted to it, and suggested that other States were waiting for that review for guidance in preparing their own plans. The Subcommittee recommended legislation requiring the preparation of State plans, regardless of whether an emergency was pending or not. No action was taken on that suggestion during the 96th Congress, but the lack of preparation for a possible energy emergency continued to be the subject of frequent debate and discussion until the Congress adjourned.

Policy Implications and Pending Actions

The 96th Congress struggled to develop energy legislation against the backdrop of disruptions brought on by the revolution in Iran. If this lent urgency to the debate, it made consensus no easier to achieve.

At its close, the 96th Congress left several new statutory measures. These included a standby gasoline rationing plan that many supported despite skepticism that it would be effective if deployed, and new Presidential authority to compel States to develop plans to reduce consumption of fuels in short supply during an emergency. For lack of Federal support in monies and technical data, development of these State plans stalled, amidst uncertainty whether State plans, developed with sensitivity to regional variables, could be any more innovative or acceptable than Federal initiatives. The experience also revealed the near futility of trying to prepare in advance for a hypothetical shortage of energy so that the costs and the shortages are distributed "equitably" and in a politically acceptable way.

The choices before the 97th Congress and the new Administration were basically three:

(1) Pursue new demand management options, such as Representative Moffett's suggestion of restricting vehicle use one or more days a week (which was included in DOE's proposed standby plan in February 1980) or Senator Johnston's emergency rebatable gas tax; (S. 2570);

(2) Return to price controls and allocation, using the experience of the previous two crisis to avoid some of the difficulties created by those devices; or

(3) Depend upon an unregulated market to determine price and allocation while maintaining the option of Government involvement if necessary to make sure that essential services are maintained.

The Pacific Northwest Electric Power Planning and Conservation Act of 1980 (P.L. 96-501)*

Background

A bill to deal with a regional problem consumed an extraordinary amount of time in the national legislature during the 96th Congress. The much-amended Pacific Northwest Electric Power Planning and Conservation Act (called the Regional Act) finally passed in the post-election session of December 1980. It had been the subject of hearings and legislative proposals for 4 years, and at the end survived a "filibuster-by-amendment" effort in the House by one of its opponents only when House leaders went for a suspension of the rules and a two-thirds vote.

The heated and lengthy debate on the measure was evidence that it impinged on sensitive energy-policy nerves. Among the most touchy issues were the role of Federal, State and local entities in planning and providing electric power on a regional basis, and the relative merits of nuclear power compared with conservation and alternative energy sources. But the effort started out as an attempt to solve legislatively a simpler problem--the allocation of cheap hydropower from Federal dams in the Pacific Northwest region.

The need for legislation arose because the Bonneville Power Administration, which sells the power from those dams to customers in the region, had announced that it soon would no longer have surplus power to sell to "nonpreference" customers--that is, private industrial consumers or investor-owned utilities. In fact, it said there would not be sufficient power to meet all the needs of its preference customers: "public bodies and cooperatives" which under the Bonneville Project Act of 1937 must be given preference and priority in distributing and selling the power from the Federal dams. The various interests in the region were faced with the prospect that any system that BPA might devise to allocate the less-than-sufficient cheap power among its preference customers would be subject to a challenge in the courts lasting perhaps a decade. They came to the Congress for a statutory allocation that would be less vulnerable to court delay.

To achieve this goal, the drafters of the bill had to satisfy a host of divergent interests:

1. Public power "preference" utilities and their customers wished to continue their access to the Bonneville Power Administration's low-cost Federal hydropower.

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2. Investor-owned utilities (IOU's), no longer able to buy surplus power from BPA, wanted to get some access to it. They also were anxious to avoid being taken over by public entities. "Preference" status had been worth little when there was surplus power, but since IOU's were cut off from BPA power their rates were about twice what preference utilities could charge. In a number of areas served by IOU's, there were suggestions that by going public, customers could gain lower rates. In fact, Oregon's governor proposed, and the State legislature passed, a bill creating a Domestic Rural and Power Authority to purchase power directly from BPA and sell it to those domestic and rural customers in Oregon--nearly 80 percent of the total--who received their electricity from IOUs. The bill would take effect if Congress did not act.

3. State versus Federal interests were involved. BPA, the Federal agency, wielded tremendous influence through its ability to set rates for its vast power interests. Many of its utility customers were apprehensive of its influence, suspicious of its motives, unhappy with its judgment and reluctant to let it play an even larger role in regional matters. Its dealings with the Washington Public Power Supply System (WPPSS), a consortium of Washington State utilities, was a case in point. BPA was prohibited from acquiring generating capacity of its own, but it had contracted with WPPSS to buy the output of three of its five large nuclear plants under construction. Under a system of "net billing", BPA essentially guaranteed that WPPSS would get its money back no matter how much the plants cost, or even if they were finished at all. The plants were far behind schedule, BPA was already paying out some of the investment costs of the project.

4. Interstate conflicts were also involved, since for various historical reasons most of Oregon's power was sold by IOU's, while most of Washington was served by public utilities. Thus the differences between private and public utilities were accentuated along political lines. Idaho and Western Montana, also included in the regional reach of BPA, each had their own interests which also differed in some respects from the coastal states.

5. Direct service industrial customers (DSI's), lured to the region by the ample supply of cheap hydropower for their energy-intensive operations (such as aluminum smelting), faced a cut-off of power at any price: BPA had announced that their long-term contracts would not be renewed when they came to an end, beginning in 1981.

6. Growth was another issue in the Northwest. A number of groups were advocating restricting growth in population and industry in the region. From their point of view, new industrial consumers of power were to be discouraged. This interest group accepted the goal of more efficient use

of resources, which was widely supported, but their definition of conservation transcended efficiency to embrace curtailment of industrial growth within the region. This view clashed with the more conventional position that traditionally welcomed new industry as a source of increased prosperity.

7. Fish and wildlife interests, who had frequently felt that BPA's policies emphasized power production to the detriment of salmon fisheries and other wild habitats, were determined that the bill put them on an equal footing.

8. Opponents of nuclear power, whose concerns and numbers increased following the Three Mile Island accident, were upset that BPA had locked itself into buying the output of the first three WPPSS plants (WNP-1, 2, and 70 percent of 3) and fearful that it would also commit itself to the last two (WNP-4 and 5).

The bill that finally emerged required considerable compromise among these various interests. As Washington Congressman Mike McCormack put it when final debate began in September 1980, "When I was first presented with the problems associated with this bill, I thought it could not be done. I repeatedly said: 'If you put all the facts and all the needs into a computer and push the button, all the computer does is go tilt.' ... I think this bill is somewhat of a miracle." 1/ To other Congressmen, particularly Representative James Weaver of Oregon, the miracle of compromise was badly tarnished. "Enactment of this bill," Mr. Weaver said in the same debate, "would be disastrous for the economy, the livelihood, for jobs and business in the Northwest." 2/

Senate Bill

The Senate version of the Regional Act grew out of a proposal developed by the Pacific Northwest Utilities Conference Committee (PNUCC), a group of public and private utilities and direct service industries, in September 1977. The bill, introduced by Sen. Henry Jackson by request (S. 2080), would have created a regional organization of utilities, public and private, and would have allowed BPA to purchase power from generating facilities that the regional group approved of. After a year of hearings and further negotiation, Senator Jackson introduced his own bill (S. 3418), cosponsored by the other five Senators from Washington, Oregon and Idaho. The bill was not reported out of

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1/ McCormack, Mike. Remarks in the House. Congressional record [daily ed.] v.126. Sept. 29, 1980: H9857.

2/ Weaver, James. Remarks in the House. Congressional record [daily ed.] v. 126. Sept. 29, 1980: H9847.

committee in the 95th Congress, but Senator Jackson introduced it again, as S. 885, on April 5, 1979.

S. 885 as Introduced. Under this version of the bill, BPA would be authorized to acquire "additional resources," including "electric power, facilities that produce electric power, planned electric power capability of generating facilities whether operating or operable, electric power conserved, and measures to conserve electric power."

Acquisitions would be according to a regional 20-year plan drawn up by BPA. Planning would be carried out in consultation with two entities created by the bill: a Bonneville Consumers Council, with members appointed by the Governors of the four-state region, and a Bonneville Utilities Council.

BPA would be required to offer to sell power to all utilities in the region to meet that part of their firm loads that they could not meet with their own resources. It would also have to offer new long-term contracts to DSIs. The preference and priority provisions of the Bonneville Project Act were specifically preserved.

Rates for preference customers would be based first on the cost of the "Federal base system resources"--including the Federal hydro facilities and BPA's interest in WNP-1,2 and 3--and then on additional resources. The same rates would be applied to residential customers of IOU's under contract with BPA. A limit would be placed on these rates after 1985 based on what they would be if all the base system resources were used to supply their needs. Rates for other customers, except DSI's, would be based on the cost of power needed to serve them. For DSI's, rates before 1985 would be set to recover the costs of supplying resi dential IOU customers at preference rates; after 1985 they would be based on rates charged large industrial customers by the utility in whose service area the DSI was located.

S. 885 as Passed by the Senate. The Senate Energy Committee reported out a bill with substantial changes on July 30, 1979, and on August 3 the Senate passed it by voice vote with a few additional amendments. The major addition to the bill was a Pacific Northwest Electric Power Planning Council, which would take the place of the Bonneville Consumers' and Utilities' Councils. Drawing up the regional 20-year plan--BPA's responsibility under the earlier version--would be carried out by the Planning Council.

In drawing up the plan, the Council would have to consider conservation first, and then renewable energy, and would have to include them in the plan if they were "cost effective". That term was defined as 110 percent the cost of the cheapest alternative. The interests of State and Federal fisheries and affected Indian tribes were also to be taken into account in the plan.

BPA could acquire a resource that was not consistent with the plan, but to do so would require an Act of Congress (with special procedures making passage easier).

House Bill

The changes in S. 885 eased but did not fully satisfy the concerns of the various interests involved in the Northwest power region. Further changes were wrought in the House Commerce and Interior Committees, and on September 29, 1980, a compromise between the two committees finally reached the floor. A major addition to the House bill prohibited BPA, in acquiring additional resources to meet its contractual power needs, from constructing or "having ownership of" any "electric generating facility." The bill also strengthened the role of fisheries in planning, and extended it to "protection, mitigation and enhancement of fish and wildlife."

Although the bill clearly had support of a majority of the House, its sponsors were unable to get it past the determined opposition of Representative Weaver. When he introduced a flood of amendments on September 29, House leaders withdrew the bill to get to more urgent legislative tasks before recessing for the election. The same tactics delayed passage during consideration of the bill on November 12, 13, and 14, and on November 17 the House suspended the rules, preventing further amendment, and passed the bill by vote of 284 to 77. The Senate agreed to the House bill by a voice vote on November 19.

S. 885 as Passed (P.L. 96-501)

The process of reaching consensus on the Regional Act led to an extremely complicated and lengthy bill. As Senator Mark Hatfield put it during the November 19 action: "The House has ... added some 60 pages ... to the Senate's 48, ... but in all it is the bill we have been working to obtain for nearly 4 years--it is complete." 3/

The major purposes of the bill remained constant throughout the debate:

* to commit BPA to supply utilities in the region with power beyond what they could produce themselves;

* to allow it to acquire the resources necessary to meet those obligations; and,

* to set up a rate-making system that would maintain the rights of preference customers, extend the same rights to residential customers of IOUs, and still not push up

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3/ Hatfield, Mark. Remarks in the Senate. Congressional record [daily ed.] v. 126. Nov. 19, 1980: S14692.

industrial rates so high as to drive the industries from the region.

In the final version, preference customers are given a priority of sales; if sales are restricted because of insufficient capacity, they must have the equivalent of the total Federal base system before any preference customer can be restricted. A "rate ceiling" for preference customers assures them that their rates will be no higher than they would have been "had the Administator [of BPA] not been required to participate in power sales or purchase transactions with nonpreference customers." New large single loads, in excess of 10 megawatts in a year, would not be given rate preference, however.

Other customers are given the assurance of power, except in low-capability situations, but at higher rates. BPA must sign long-term contracts with IOUs, public power authorities, Federal agencies and existing DSIs, to meet firm power needs beyond their own resources. To meet the new requirements, BPA can acquire power, but not plant, from other utilities.

The Regional Council must develop a 20-year plan within 2 years, and BPA's capacity acquisitions must be consistent with the plan. Conservation and renewable resources must be acquired first, if they are cost-effective. BPA's rate-making also can credit utilities for their individual actions to implement conservation and renewable resource utilization.

Residential customers of IOUs will be afforded the same rates as those of preference utilities; the increased cost will be picked up by DSIs.

The Council will establish a program to protect, mitigate and enhance fisheries and wildlife. Funding for the program is to come from BPA rate revenues.

Policy Implications and Pending Actions

The many unique features of the Pacific Northwest energy situation make it difficult to extrapolate implications for national energy policy. Much of the detail in the bill is concerned with splitting up the Federal hydropower pie in as equitable a manner as possible; these provisions have been described to only a very cursory degree. A number of features of the debate have broader significance, however.

One of the most persistent was the question of growth in demand. Although most participants were interested in supporting more efficient use of electricity, there was continued skepticism on the part of opponents of the bill that the incentives for conservation were strong enough to overcome the traditional thrust toward growth and increased consumption.

A colloquy between Mr. Weaver and Representative Clarence Brown of Ohio reveals this opposing view most vividly. Mr. Weaver was supporting his amendment to remove from the list of DSI's the right of Alumax Corp. to contract for 320 megawatts of power for an aluminum plant that had not been built yet. He argued that it would raise rates for his district, served by a BPA preference customer, Eugene Water and Electric Board. Mr. Brown asked whether the aluminum plant would not create new jobs; Mr. Weaver replied that the energy-intensive character of the plant would instead drain jobs from the region, since building the electric capacity needed for the plant would take capital that otherwise would be purchasing power in the hands of his constituents. He said the timber industry, less energy intensive, could "produce 20 times the number of jobs with the same electricity, and that is 20 times the number of jobs with the same capital." Mr. Brown said he found Congressman Weaver's attitude "peculiar." 4/

Nuclear power construction, particularly by an entity that had access to Federal backing in the capital market, was another difficult issue. Some supporters of the bill who expressed opposition to nuclear power contended that the limitation on BPA's acquisition rights guaranteed that the bill was not promoting nuclear power. 5/ Opponents, on the other hand, argued that melding in nuclear power costs with the extremely low hydropower costs masked the true cost of the nuclear generation and discouraged conservation. 6/

The relationship between the dominant Federal agency, BPA, and local entities, also remained a problem. Another amendment proposed by Weaver would have allowed individual utilities to choose not to participate in specific BPA projects. He pointed out that, although a utility could choose not to sign a contract with BPA, it would then lose access to the cheap Federal hydropower. It thus had little choice but to go along with the entire BPA program, and help pay, through higher rates, for BPA projects which it felt were not needed. Its only recourse, under the bill, would be the Regional Council, which might not

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4/ Brown, Clarence, and James Weaver. Remarks in the House. Congressional record [daily ed.] v. 126, Nov. 12, 1981: H10519-H10520.

5/ Bonker, Don. Remarks in the House. Congressional record [daily ed.]. v. 126. Nov. 17, 1980: H10679.

6/ Ottinger, Richard. Remarks in the House. Congressional record [daily ed.]. v. 126. Sept. 29, 1980: H9861-H9862.

agree with it any more than BPA did. 7/ To many participants in the debate, the sacrifice of independence required by the bill was the price necessary for resolution of the Northwest power dilemma that faced them. For opponents of the bill, the solution was not worth the sacrifice.

The Regional Act imposed tight time limits on BPA and on the new Regional Council to implement the statutory re-requirements of a long and complex law. In light of the highly controversial nature of the provisions of the Act, and because of the large and growing role of the Federal Government in the energy picture in the area, continued Congressional interest in how the Act is carried out was to be expected.

7/ Weaver, James. Remarks in the House. Congressional Record [daily ed.] v. 126, Nov. 12, 1981: H10517.

CHAPTER III: FOSSIL FUELS ENERGY POLICY

FOSSIL FUELS RESEARCH AND DEVELOPMENT*

Background

The fossil fuels budget during the 96th Congress reflected a renewed interest by the Federal government in coal and coal's ability to be substituted for imported oil. In particular, the largest components of the fossil R&D budget were for large demonstration plants for converting coal into more useful forms of energy--oil and gas. Other priorities in the budget included improved technologies for direct burning of coal, oil shale, and unconventional natural gas sources.

The DOE synthetic fuels emphasis was designed to complement the massive synthetic fuels program envisioned by the Energy Security Act, P.L. 96-294. (See Chapter II.) While complementing the ESA program, the DOE synthetic fuels effort was separate, relying on cost-sharing agreements with private industry (and with foreign governments in the case of one major project, SRC II) for financing.

The three major projects included in the DOE fossil fuels budget were:

(1) the Solvent Refined Coal (SRC I) plant at Newman, Kentucky;

(2) the Solvent Refined Caol (SRC II) plant at Morgantown, West Virginia;

(3) the low/medium Btu gasification plant at Memphis, Tennessee.

Together, these three projects represented $383 million in FY81 appropriations --over half the fossil fuels R&D budget.

This funding emphasized the desire of the 96th Congress and the Carter Administration to establish and provide initial subsidies for a national synthetic fuels program.

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* By Larry B. Parker, Environment and Natural Resources Policy Division

Legislation Completed

During the Carter Administration, the Congress failed to pass an authorization bill for the Department of Energy's various programs, including fossil fuels R&D. Instead, the fossil fuels program relied on the annual appropriations bills for guidance. The appropriation bills (P.L. 96-126 and 96-304 for FY80, and P.L. 96-514 for FY81) provided the following funding for fossil fuels R&D.

TABLE 1

FOSSIL FUELS R&D APPROPRIATIONS, 96TH CONGRESS
($ million, Budget Authority)

Catagory	FY80	FY81
COAL		
Mining R&D	59.3	49.5
Liquefaction	248.9	521.4
Gasification (surface)	113.3	164.9
Gasification (in situ)	10.0	10.0
Advanced Research and technology development	56.2	58.3
Advance environmental control technology	38.3	37.5
Heat engines and heat recovery	50.5	36.4
Combustion systems	2.5	22.0
Fuel Cells	26.5	32.0
Magnetohydrodynamics	79.0	67.0
Program Direction	10.6	10.8
PETROLEUM		
Enhanced oil recovery	23.1	18.6
Oil shale	28.2	33.0
Drilling/offshore technology	3.0	2.4
Advanced process technology	6.0	4.0
Program Direction	1.4	1.5
NATURAL GAS		
Enhanced gas recovery	30.3	30.5
Program Direction	.4	.4

Legislative Proposals

The failure of the 96th Congress to pass a DOE authorization bill reflected not so much disagreements on the fossil fuels budget as over other DOE programs, particularly the Clinch River Breeder Reactor. Both House and Senate authorization committees succeeded in recommending funding levels for Title I of the DOE authorization bills (fossil fuels R&D), but neither House passed them.

The House Science and Technology Committee, which had sole jurisdication over Title I, reported out a FY 81 authorization bill on May 16, 1980. The bill (HR 6627) provided funding levels for fossil fuels R&D which differed from the Carter Administration's proposal (both the original request and the March 1980 revision) and the bill reported out by the Senate Committee on Energy and Natural Resources (S. 2332). These funding levels are given in Table 2.

TABLE 2

PROPOSED FOSSIL FUELS R&D AUTHORIZATION, FY81
($ Million)

	FY81 Request	March Revision	H.R. 6627	S. 2332
Operating and capital equipment	691.7	660.7	701.6	821.3
Construction	449.8	445.8	375.6	530.6
Total	1141.5	1104.5	1076.2	1351.9

In particular, H.R. 6627 provided $160 million for SRC II and $150 million for SRC I. No new authorizations were necessary for the Memphis gasification project. President Carter had recommended considerably more for construction and less for operations and capital than the committee. Funding for SRC I and SRC II was reduced $95 million by the committee.

In contrast to the House and the Administration, whose proposed authorization bills were detailed, line-item considerations of all activities and programs of DOE, the Senate Energy Committee attempted a different approach to the authorization process. Finding the line-item by line-item process too time consuming and duplicative of the appropriation bills, the Committee set overall ceilings for general catagories of programs, such as fossil fuels R&D, and left the detailed "filling in" process to the Appropriations Committee. Basically, the Senate authorization bill (S. 2332) authorized funding to continue existing levels of activities, while approving major program initiatives, redirections, and projects.

Unlike the House Committee bill, the Senate committee agreed with the Administration's budget request for SRC I and SRC II ($405 million). Indeed, the Senate committee exceeded Administration's budget request in most areas. However, as in the case of the House bill, the Senate bill was never voted on by the full body.

Issues Pending for the 97th Congress

The trend of fossil fuels R&D during the 96th Congress was toward emphasis on coal synthetic fuels technologies and large scale demonstration projects. This interest by Congress was also evident in the creation of the Synthetic Fuels Corporation. Such a substantial commitment raised several questions for the 97th Congress, both of substance and process. Substantial questions included:

1. Should the fossil fuels program be so heavily weighed toward coal synthetic fuels, particularly liquefaction?

2. Should the role of other fossil fuels, like oil shale, be expanded?

3. Should the program emphasize the construction of a few large scale demonstration plants?

Process-oriented questions for the 97th Congress included:

1. What should be the relationship between the SFC and the DOE programs?

2. Should there be a separate DOE demonstration program?

3. What is the proper role of private industry in taking some of risks of technology development?

The fossil fuels R&D budget represented a substantial portion of DOE's overall R&D program. Answers to these questions were to be sought in the context of stronger calls for fiscal restaint. The result could be a focus on the more fundamental question of energy research priorities in general.

OIL IMPORT QUOTAS AND FEES*

Background

The recurrence of gasoline lines in the Spring of 1979 brought renewed impetus to the Carter Administration's efforts to reduce dependence on foreign oil. In June President Carter announced a limit to oil imports of 8.5 million barrels a day--the average in the peak year of 1977, before Alaskan oil began to reach the market and reduce the need for imports. He also set a goal of reducing imports by half by the end of the 1980s.

By March 1980, the continued sharp increase in oil prices, combined with a slowdown in the economy, had led to lower consumption of oil and gasoline, and a reduction in imports. The President in his March 14 anti-inflation speech nevertheless argued that "we must do more" to "forge ahead toward the goal" of halving imports by 1990. In addition to asking for passage of the Windfall Profits Tax, the Energy Mobilization Board and the Energy Security Corporation, he announced an import fee of $4.62 per barrel. The cost of the fee was to be channeled through the entitlements program so as to raise the price of gasoline about 10 cents per gallon, without affecting the price of other refined products such as heating oil.

The measure was enormously unpopular in the Congress, and a resolution killing the fee--under a provision, ironically, included in the just-passed Windfall Profits Tax he had asked for at the same time--passed overwhelmingly. A Carter veto was overridden by a large margin on June 6.

The defeat of the import fee brought to an end the Administration's efforts to influence the import level of oil through tariffs or quotas--efforts that began with the proposal a year earlier to impose quotas.

Proposed Import Quotas. At the Tokyo Economic Summit Conference in June 1979, President Carter, along with the leaders of Canada, France, Italy, Japan, the United Kingdom, and West Germany, agreed upon levels. Following his consultations at Camp David, the President announced quotas on the import of foreign oil, restricting imports to the 1977 level. (The limit was orginally set at 8.5 million barrels per day, and reduced to 8.2 million barrels per day in January 1980).

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The Secretaries of Energy and Treasury were directed to develop plans to enforce the quota. Hearings were held in five cities to solocit comment on three proposals: (1) an auction system, (2) a license fee system, and (3) a non-charge allocation system. Petroleum industry analysts and others testified against any quota system, in many cases opposing interference in the market by Government and suggesting that the marketplace, if unconstrained, was most efficient in determining supply of and demand for petroleum products.

In the latter half of 1979 oil prices jumped again, to more than twice their level at the end of 1978. Petroleum consumption in the United States declined from the levels one year earlier in every month after February 1979, in large part because petroleum products were more expensive. Gasoline consumption was 9.3 percent lower in February 1980 than it was one year earlier, and net imports of crude oil and petroleum products were 7.3 MB/d, off nearly 10 percent.

Another major factor contributing to the decline in petroleum consumption was the economic downturn that began around January 1, 1980. Recessions lead to decreased income and employment, reducing demand for energy and petroleum. Another factor was the relatively mild winter in the United States in 1979-1980 that resulted in less demand for distillate fuel than in previous winters. These developments removed the immediate need for a system of imposing quotas, although it was suggested that a standby quota system be prepared to halt any future rise in imports.

Import Fees. Less than 7 weeks after he sent his budget to Congress, and following three and a half weeks of consultation with Administration economists, policymakers, and congressional leaders, President Carter announced the general outline of his revised anti-inflation program March 14, 1980. One of the more controversial measures in the package involved a fee of $4.62 per barrel on imported crude, to be replaced by an increase in the Federal excise tax on gasoline, if and when Congress approved the gasoline tax legislation. The fee would have generated an estimated $10.7 billion.

The President assumed the authority to institute a fee on oil imports under provisions of the Trade Expansion Act of 1962, as amended, along with its predecessors. The Act provided that upon the Secretary of the Treasury's finding that a commodity is entering the country "in such quantities or under such circumstances as to threaten or impair the national security," the President may "take such action, and for such time, as he deems necessary to adjust the imports of [the commodity]..." As a result of this authority, investigations of imports of petroleum and petroleum products were conducted during the Eisenhower, Ford, and Carter Administrations (most recently in March 1979). In all three cases, it was concluded that imports of crude oil and petroleum products were entering the country "in such quantities and under such circumstances as to threaten or impair the national security." Following the initial finding in 1959, President Eisenhower issued Presidential Proclamation 3279, which established the Mandatory Oil Import Program (MOIP), a quota system for controlling imports of crude and petroleum products. In 1973 the MOIP was amended to eliminate quantitative limits on imports and substitute a system of licenses subject to the payment of fees. The fees, 21 cents a barrel for crude oil and 63 cents a barrel for products, were suspended on April 1, 1979. Until President Carter's speech, there were no restrictions on the import oil into the United States other than the requirement to obtain a license from the Department of Energy's Office of Oil Imports.

The Carter Administration considered a charge on petroleum imports in December 1979 as part of budget deliberations and as a method of cutting gasoline consumption in 1980. The fee idea was rejected by Administration analysts because oil-exporting governments were sharply boosting the price of oil, and those higher prices were expected to decrease gasoline consumption. In such a rapidly changing situation, it was argued, it was nearly impossible to ascertain what price level would be required to meet any given conservation goal. During the intervening 3 months, petroleum product prices rose faster than Administration energy forecasters expected, and consumption fell below levels one year earlier. These factors led some opponents of the fee to suggest that the import fee may have been considered a revenue measure as much as an energy conservation measure, altough in his speech the President said he did "not intend to use those revenues to balance the budget." Presidential Proclamation 4744 of April 2, 1980, formally instituted the Petroleum Import Adjustment Program, retroactive to March 15, 1980. Technical amendments to Proclamation 4744 were made in subsequent Presidental Proclamation 4748 and 4751.

Fee Structure. The structure of the system involved two fees; a $4.62 fee levied on each barrel of crude oil imported and a $4.20 fee levied on each barrel of imported gasoline. The United States was importing an average of 6.25 million barrels of crude oil a day that would bear the $4.62 a barrel import fee. The Administration estimated that the fee on imported crude would bring the U.S. Treasury over $10.5 billion annually. In addition, the $4.20 a barrel import fee on gasoline imports, then averaging 147,000 barrels a day, would raise over $225 million in new revenues. Assuming a continuation of those import levels, total revenues from the charge on imported crude and gasoline were expected to be over $10.7 billion annually, according to Administration estimates. To the extent that price increases reduced consumption, the Treasury's actual yield from the import fee would be less.

The Congressional Budget Office (CBO) estimated that the import fee plan would net $3.1 billion for the Treasury in FY 1980 and $10.0 billion in FY 1981.

Since there are 42 gallons in a barrel, the $4.20 a barrel fee on gasoline would add 10 cents a gallon at the pump. With regard to crude oil imports, the more than $10.5 billion paid annually by refiners for this crude oil to the Government was to be passed on to consumers by adding the cost of the fee to the approximate 6.85 million barrels of gasoline produced daily by the industry. Most analysts, therefore, expected that retail gasoline prices would increase an average of 10 cents a gallon.

Oil industry observers indicated that it was uncertain whether decontrolled domestic crude oil would experience "sympathetic" price hikes equal to the import charge, further increasing the retail price of gasoline and perhaps other petroleum products. It is not clear how the Department of Energy would have forced refiners to direct the total burden of the import fee onto gasoline prices, although Administration spokesmen indicated they would have used the Federal oil entitlements system. This was a system of payments among refiners intended to equalize roughly the cost of acquiring crude oil, even though some refiners had access to price-controlled domestic crude. What additions or adjustments to the energy bureaucracy would have been needed to administer this complicated program were not clarified. Because of the time lag caused by refining and transport, the bulk of the added 10 cents a gallon was expected to show up on gasoline pumps around May 15, 1980, according to DOE. Stations selling imported gasoline, to be profitable, would have been forced to pass the additional import cost on to consumers as soon as the gasoline was delivered to them.

Opponents of the fee said the $4.62 fee level appeared unlikely to reduce consumption significantly. Typical estimates suggested that a 1 percent increase in the price of gasoline will generate a 0.15 to 0.20 percent reduction in gasoline consumption. A price increase of 10 percent would, in the short run, be expected to bring about less than a 2 percent reduction in gasoline consumption, or about 134,000 barrels a day at 1979 levels. CBO estimated that the import fee would reduce consumption of petroleum by about 80,000 barrels a day in 1980 and 100,000 barrels a day in 1985.

Federal Gasoline Tax. An increase in the Federal excise tax on gasoline required approval of Congress, while the imposition of an import fee did not. In his address, President Carter said he would submit legislation that would increase the Federal gasoline tax and supplant the oil import charge. As conceived, such a bill would increase the gasoline tax 10 cents a gallon on top of the current 4 cents a gallon tax, for a total Federal tax of 14 cents a gallon. Every 10 cents a gallon added to the Federal excise tax on gasoline was estimated to raise over $10 billion annually in added Federal revenues. The tax, as the Carter Administration viewed it, would be less complex than the import fee system and would probably be applied to diesel motor fuel as well as gasoline. The effect on retail gasoline prices and consumer prices would be similar to the import fee.

Congress repeatedly rejected proposals to increase the Federal gasoline tax in 1975 and 1976, and more recently, a proposal contained within Carter's National Energy Plan of April 1977.

Pro and Con. Supporters of the Administration's proposal argued that dependence on foreign oil was associated with risks to national security, and that one of the important battles in the war against inflation involved reducing the dependence of the United States on foreign oil. They argued that the greatest single danger to any new antiinflation program was the possibility of further oil price increases. They pointed to the growth of the U.S. oil import bill as damaging the value of the dollar, increasing the trade deficit and fueling both inflation and inflationary expectations; the 1980 oil import bill was expected to exceed $95 billion, which would be nearly 4 percent of the anticipated 1980 Gross National Product.

Opponents, on the other hand, pointed out that a fee on petroleum imports would increase rather than reduce prices, at least in the short run. The 10-cent-a-gallon price increase caused by the import fee would have represented a 9 percent gasoline price hike. Beginning about May 15, 1980, such an increase in gasoline prices would have added over 0.5 percent to the Consumer Price Index and an even greater amount as the increased cost of gasoline worked its way through the economy. The Congressional Budget Office estimated that the Consumer Price Index would increase by three-quarters to one full percentage point, depending on the type of rebate plan developed--if a rebate plan was developed at all.

One of the major goals to emerge from the President's consultations on revising economic policy was to balance the FY81 budget. On March 20, the House Budget Committee passed a resolution that called for $611.8 billion in spending ($16.5 billion less than President Carter's January budget proposal) and estimated revenue at $613.8 billion in FY81.

In addition to reducing expenditures, President Carter's aides were reported to have examined methods of increasing revenues and to have reconsidered oil-import fees as a new revenue measure. President Carter noted that the revenue from the import charge would be held aside to help retire the Federal debt, but oil industry experts were skeptical as he also mentioned that the revenues would serve as a "margin of safety" against a FY81 deficit. The House Budget Committee's resolution called for the revenue from the import fee to be used to finance a tax cut in FY81 if there was not a budget deficit.

In the short run, it did not appear likely that a 10 cent a gallon gasoline price increase would reduce consumption or import of petroleum products more than 2 percent. Because it was not expected to reduce consumption notably, at least at the $4.62 a barrel level, it was argued that the fee would hardly aid in discouraging future price increases by producer governments; some opponents said it would signal oil-producing nations that they could increase prices without damanging the U.S. economy. By imposing the fee, President Carter did provide the United States' oil consuming allies with evidence of the country's economic discipline, and his measures were praised in European capitals.

Court Action. In Washington, D.C. Federal district court, a coalition of energy and consumer groups and Representatives Toby Moffit, Ed Markey, Andrew Maguire, Jon Hinson, and David Stockman filed suit to prevent the Administration from further implementating the import fee. On May 13, 1980, two days before the passthrough of the fee was to take effect, Judge Aubrey Robinson issued a temporary injunction prohibiting the Government from implementing the program. In his ruling, Judge Robinson suggested that the Administration was attempting to circumvent earlier congressional refusals to impose a gasoline tax in the guise of an import control measure. The Administration appealed the ruling and the White House announced on May 14 that it would delay the import fee, pending the outcome of legal and legislative moves aimed at prohibiting the fee.

Legislation Enacted

Under the Crude Oil Windfall Profit Tax Act of 1980, presidential actions, taken under the Trade Expansion Act of 1962, that adjust petroleum imports can be vetoed by passage of a joint resolution by both Houses of Congress. The resolution of disapproval is subject to a presidential veto, which in turn can be overridden by a two-thirds vote in both Houses.

The resolutions disapproving the fee (S.J. Res. 159 and H.R. 531) were introduced in April. On June 4 the House voted 376-30 for disapproval, and the Senate followed the same day, passing the disapproval measure by a four-to-one majority and tacking it onto a routine but urgent bill, H.R. 7428, extending the ceiling on the public debt. The House leaders, who supported the President's plan, had attempted to prevent a vote on the disapproval resolution, but were forced to bring it to the floor, and on June 5 agreed to the Senate move attaching it to H.R. 7428. President Carter vetoed the bill the same day, but on June 6 the House voted 335-34 to override, and the Senate followed the next day by a vote of 68-10.

Policy Implications and Pending Actions

The overwhelming defeat of President Carter's oil import fee demonstrated once again how truly unpopular the idea of an increase in the national tax on gasoline could be. Attempts by President Ford in 1975 to impose a fee on imported oil led to a similar response by the Congress. It rescinded his fee and took away his authority to impose it, and only refrained from overriding his veto of the measure as part of a compromise on oil pricing policy that led to the measure as part of a compromise on oil pricing policy that led to the Energy Policy and Conservation Act of 1975. User fees on oil that were part of President Carter's National Energy Plan also were extremely unpopular; although the House version of the National Energy Act included them, the Senate rejected the concept, and the conference committee did not seriously discuss them.

On the other hand, President Carter's perserverance in pursuing the import fee was evidence of its viability, both as a revenue-raising device and as an energy policy. As a source of revenue, even the existing 4-cent Federal tax garnered up to about $4 billion in 1980, and the Carter proposal was expected to bring in an additional $10 billion. As energy policy, the Ford import fee was aimed not only at discouraging imports and inducing conservation but also at giving domestic oil an advantage which he hoped would stimulate more production. A portion of this traditional tariff advantage was lost in the Carter plan, since the fee was to be passed through via the entitlements program to consumers of all gasoline, whether refined from domestic or foreign crude. In addition to forfeiting that political advantage, the Carter fee suffered because of its dependence on the complicated entitlements system, which was due to lapse with the end of oil price controls the follwing year. Most important, the timing of the proposal was awkward: it followed the second rapid OPEC run-up of oil prices, and came at a time when consumption of gasoline had fallen and was continuing to fall dramatically. As a result the plan was attacked from two opposing directions at once. Some argued that price did not encourage conservation, so prices should be controlled and kept low. Others said price had already led to substantial conservation, and the additional effect of the import fee would be insignificant and not worth the bureaucratic effort to administer it.

The negative features of the Carter fee proposal were so great--at the time it was proposed--that the Congress went out of its way to defeat it, instead of allowing the President to "take the heat" by merely doing nothing. But the pros and cons of a gasoline tax remain: it is a mighty source of revenue, on a commodity that is essential, widely used and very expensive. The existing tax was imposed in the 1950s to pay for construction of the Interstate highway system. When gasoline was 30 cents a gallon, 4 cents was a substantial surcharge for a massive construction project. With gasoline at $1.30, 4 cents seems much less significant; but the Interstate system is almost completed. The balancing of pros and cons of an increased tax will likely continue to be an issue for the 97th Congress.

OIL PRICE DECONTROL*

Background

The significant increase in world crude price that followed upon the Iranian Revolution, and accompanying gasoline lines and supply dislocation, brought new pressures to bear on oil pricing policy. On economic grounds, it became more difficult to defend decontrol because the sharp rise in prices worsened the potential impact of decontrol on consumers. At the same time, the gasoline lines and distillate shortages underscored the nation's increased dependence upon foreign sources of petroleum for its economic well-being.

Price controls were first imposed on crude oil and petroleum products in 1971 by the Cost of Living Council. When shortages threatened in 1973 and the Administration proved reluctant to exercise discretionary power accorded to it by the Economic Stabilization Act of 1970 (P.L. 91-379) to mandate the allocation of petroleum, Congress enacted the Emergency Petroleum Allocation Act (EPAA, P.L. 93-159). Subsequently amended and extended by the Energy Policy and Conservation Act (EPCA, P.L. 94-163), the latter bill provided that controls could be removed after May 1979 at the sole discretion of the President. Prior to that date, decontrol actions initiated by the Administration were subject to legislative veto.

In early 1979, the Administration reviewed the possibilities that would open to the President on June 1. In mid-February, Secretary of the Treasury Fred Blumenthal emphasized that the price of oil had to go up, and that the Department would be making recommendations to the President after study of the alternatives.

Congress also had a number of policy options, depending on the President's action: (1) to allow the President's decision to stand; (2) to extend mandatory price controls to forestall any decontrol action and to shelter consumers from sharp increases in petroleum prices; (3) to impose a tax on petroleum in the form of a "crude oil equalization tax," a severance tax or a corporate windfall profits tax; or (4) to decontrol crude and/or gasoline on their own initiative.

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The President's Initiative: Phased Decontrol. President Carter, in his energy speech of April 5, 1979, announced his decision to begin a phase-out of oil price controls beginning on June 1, 1979. The purpose of phased decontrol was to minimize the economic shock from suddenly having significant quantities of crude rise sharply in price. The President characterized price decontrol as "painful" but "necessary." "I'll give it to you straight," he said. "Each one of us will have to use less oil and pay more for it." The decision to decontrol was painful, in part, because price controls had coupled energy policy with social welfare policy, protecting lower-income families from paying market prices for energy products.1/ The decision to decontrol was made on the basis of national security--to reduce dependence on foreign petroleum through price-induced conservation--and to utilize the market to encourage domestic production. The economic impact of decontrol would be softened by gradually phasing out controls. More importantly, President Carter coupled decontrol with a windfall profits tax, designed to capture some of the incremental, unearned income accruing to the oil industry as a consequence of decontrolling petroleum prices.2/

President Carter's schedule was intended to phase out controls completely by September 30, 1981 when existing control authorities were scheduled to expire. The schedule favored categories of oil which held the most promise for short-term increases in production. Price increases for upper and lower tier oil were not scheduled until early 1980, allowing time for enactment of a windfall profits tax.

In brief, the phased decontrol plan provided that:

- As of June 1, 1979, newly discovered oil would receive the world price.
- As of June 1, 1979, 80 percent of all production form marginal wells could be sold at the upper tier price. Marginal wells were defined by the depth of the well and daily production.

1/ At least, this was the theory. Some economists pointed out that during periods of plentiful supply and competition, petroleum products sold at or below allowable ceiling prices, and argued that the benefits of price controls were marginal. Others argued that the benefits of controls--measured as the difference between the acquisition cost for controlled domestic and uncontrolled foreign crude--were not being passed through to consumers by refiners.

2/ The history of the Windfall Profits Tax Act of 1980 (P.L. 96-223) is detailed in Chapter II of this volume.

- The remaining 20 percent of production from marginal wells would be released to the upper tier price on January 1, 1980.
- Incremental new production from wells employing specified enhanced recovery techniques could be sold at the world price beginning June 1, 1979. Commencing January 1, 1980, producers investing in enhanced recovery projects could release specified volumes of lower tier oil to be sold at upper tier price.
- Beginning January 1, 1980, the price for upper tier oil would increase in equal monthly increments until it reached the world price on October 1, 1981.
- Between June 1, 1979 and January 1, 1980, the volume of lower tier oil would decline at a rate of 1.5 percent per month, increasing to percent as of January 1, 1980. The affected lower tier oil would become upper tier oil eligible to be sold at the prevailing upper tier price.

Legislative Proposals

Bills and resolutions introduced both before and after the President's address fell into three broad categories: (1) legislation to extend mandatory price controls for some specified period; (2) bills to eliminate controls altogether, and (3) technical amendments which would affect the volume or classifications of decontrolled oil, some of which were coupled with windfall profits tax provisions. For example, S. 316 would have broadened the definition of stripper well oil to prolong the life of wells which might other wise have been shut in.

Both House Ways and Means Chairman Al Ullman and Senate Finance Chairman Russell Long had recommended to the President phased decontrol of oil prices coupled with a windfall profits tax. Despite this strategically placed support for the President's ultimate proposal, several members of the House and Senate, following the President's address, joined in support of legislation to retain price controls until October 31, 1981.

In the Senate, Senator Henry Jackson and 13 others introduced S. 936; the comparable legislation in the House, H.R. 3620, was sponsored by Representative Thomas Luken and 24 colleagues. The fact sheet accompanying the President's address estimated a potential savings between 950,000 and 1.1. million barrels daily in 1985, a figure which Senator Jackson declared inadequate to justify what he estimated would be a tremendous inflationary impact of decontrol. On April 18, Senator Jackson released a study prepared by the Congressional Budget Office, which estimated oil import savings between 650,000 and 850,000 in 1985. But in early June, Senate Majority Leader Robert

Byrd endorsed the President's program, assuring President Carter that Senator Byrd would not block a filibuster staged to oppose legislation that would retain controls. Senator Byrd's support made it highly unlikely that the President's plan could be overturned in the Senate.

Action in the House was more dramatic. On May 2, the House Commerce Committee narrowly defeated (21-21) an amendment to the Department of Energy FY 81 authorization (H.R. 3000) proposed by Representative Toby Moffett which would have extended price controls through 1980. Subsequently, on May 22, the House Demoncratic Caucus refused, by a vote of 153-82, to set aside a Moffett resolution stating that continued controls were a policy of the House. Lack of time precluded a vote on the resolution itself, but supporters of the resolution predicted a floor fight in the House when the authorization bill came up for debate.

The House debated the DOE authorization bill in mid-October 1979. On October 11, Representative Moffett's amendment to restrict expenditures of funds by DOE to implement phased decontrol was defeated (135-257). Representative Symms then introduced an amendment to prohibit the use of funds for the promulgation, administration or enforcement of price and allocation controls on crude oil, petroleum products and natural gas. Representative Timothy Wirth noted in the brief debate on this amendment that the vote on the Moffett amendment--opposed as it was by a number of Democrats and Republicans supporting phased decontrol, "I do not think it is necessary with this amendment for Members of the House to be asked to prove some kind of purity one way or another...." The Symms amendment was defeated by a division vote of 17-20; a request for a recorded vote was refused. Representative Peter Kostmayer, citing a Library of Congress study analyzing the recent price path of middle distillates, introduced an amendment calling for recontrol of middle distillates; it was rejected 124-243.

The amendment and debate on October 11 were not the end of the matter. When debate continued on the authorization bill the following day, Congressman James Courter introduced an amendment modeled after the Symms amendment of the previous day, but narrowed to prohibiting monies to be spent to administer controls on motor gasoline. The amendment passed, 191-188, but Representative John Dingell said he would attempt to overturn the amendment in later debate. Sixty-one Democrats had voted for the amendment, but 37 Democrats were among the 54 members absent when the vote was taken. The Democratic leadership was therefore hopeful that the vote could be reversed.

The leadership was also hopeful that the vote could be reversed because the House had approved an amendment introduced by Representative Phil Gramm just after approval of the Courter amendment on October 12 which provided for standby priority allocation of gasoline for agricultural users and other priorities. The passage of this amendment created an anomaly--retaining a limited allocation authority after junking entirely the price and allocation system. There was also some doubt whether the allocation authority of the Gramm amendment could be effectively carried out without some price control authority. These arguments, coupled with greater attendance by Democrats on October 24, recent reports of handsome oil industry profits, and concerted lobbying effort before the vote was taken, led to a reversal of the Courter amendment by a vote of 189 in favor of gasoline decontrol and 225 opposed to it. The House then approve the authorization bill; but the DOE authorizations bill in the Senate was never acted upon.

Policy Options and Issues Pending

Decontrol was not prominent as a discrete issue during the second session of the 96th Congress, though the virtues of a free market were extolled in debate over the revised standby gasoline rationing plan and other other emergency energy preparedness proposals. (See Chapter II). The debate over the authorization bill in the House reflected less a lack of heart for removing controls than it did the complete improbability that the House could ever vote to reimpose or retain them. The votes reflected, as was observed by Representative Wirth, an emerging consensus that the course of phased decontrol appeared to be in the best short-term and longerterm interests of the nation. This apparent consensus was bolstered by the relative calm that had begun to characterize the oil markets by late 1979 and throughout 1980. When demand and supply are in balance, oil price controls are not perceived as terribly harmful--and while such a market provided an ideal occasion for the lifting of controls, it also neutralized any sense of urgency to do so. In the end, the 96th Congress seemed content to await the expiration of controls as engineered by the Administration and as provided for by the 94th Congress in its enactment of the Energy Policy and Conservation Act.

OIL AND GAS ON FEDERAL LANDS*

Background

The Federal Government owns and manages vast acreages under a number of different categories and agencies. The main ones are as follows:

*Bureau of Land Management in the Interior Department (BLM): 244 million acres onshore; 965 million acres on the Outer Continental Shelf (OCS);

*U.S. Forest Service in the Agriculture Department: 197 million acres;

*Fish and Wildlife Refuges in the Interior Department: 86.7 million acres;

*Military lands under the Army, Navy, Air Force and land under the Army Corps of Engineers: 30.3 million acres.

BLM is responsible for administering the leasing of all these lands for fuels and minerals exploration and development. The fuel and mineral resources on Federal lands have been the focus of ever-increasing interest, especially in recent years, with the continuing decline in domestic oil production.

During the two years of the 96th Congress, the Executive Branch carried out increasing activity in assessing the extent of the fuels and other resources of these lands. In part this was a response to the requirement of the Federal Land Policy and Management Act of 1976 (P.L. 94-579), but it also arose from the new sense of urgency since the mid-70's to assure less dependence on foreign sources of fuels.

The problems and concerns involved in the outer continental shelf are very different from those involved in the onshore Federal lands. These two sets of concerns are are summarized below.

Onshore Federal Lands: Background

During the 96th Congress, interest continued to increase in the exploration and development of oil and gas and other minerals resources on the public lands. The Federally owned lands occur mainly in the Western states and in Alaska. A major bill which dealt with disposition of the Federal lands in Alaska passed in the closing days of the 96th Congress, with momentous consequences for both the development and the preservation of vast tracts of Alaskan land.

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Legislation Completed: The Alaska Lands Act

The Alaska National Interest Lands Conservation Act, signed into law on December 2, 1980 (96-487), was the subject of intense debate over the previous nine years. Much of the controversy concentrated on how much of the vast areas of Alaska should be open to development, especially for oil and gas. The final compromise did not completely satisfy either those who argued for development, nor the advocates of preservation. The House agreed to the Senate version of the bill as the 96th Congress came to a close in order to settle the issue before the new Administration took over.

The major controversy was over how much land to place in protected designations such as parks, wildlife refuges and wilderness, and how much to place in multiple use designations which would permit mining, oil and gas leasing, and timber production. A related issue, subject to extensive debate, was over access corridors through protected areas which would allow development of areas that were open to leasing. Of the 375 million acres in the state of Alaska, 104 million acres were to go to the State, some 44 million were given to Alaska native corporations, about one million acres were in private ownership, and the rest to be designated for placement in various categories of Federal managment. The major share of interest and concern with respect to energy development was on the North Slope of Alaska--the area north of the Brooks range--where the 23-million-acre Alaska National Petroleum Reserve is located, and where Prudhoe Bay, the largest oil reserve in the U.S. is found. Also in this area is the massive Arctic National Wildlife Range, which is of value to wildlife protection, and presented one of the most likely conflicts between preservation and energy development.

The House and Senate bills diverged, with the House providing larger amounts of land in protective categories. The Senate bill, which prevailed, provided for exceptions in some refuges and other protected areas to allow some sport hunting, mining, and energy development.

Both House and Senate expressed concern that too extensive an area in Alaska should not be "locked up" and unavailable for energy exploration and development. Environmental interests had argued, on the basis of the available information, that some 95 to 97 percent of lands with high potential for energy resources lay outside areas proposed for protection. On the other hand, pro-development interests argued that, although extensive reporting form the U.S. Geological Survey and private sources was available on geologic potential of the lands in question, neither actual drilling nor seismic exploration had been done in these areas, so actual reserves were unknown.

The Congress responded to this issue by providing for extensive assessment of the energy and mineral resources on all the lands under Federal management. The only areas permanently off limits to energy and mineral exploration and development were the 43.6 million acres designated as parks, and the 18.7 million acres of wilderness designated within wildlife refuges. The rest of the Federal lands in Alaska were subject to the following conditions:

1) North Slope Lands Studies: All Federal lands on the North Slope, and east of the National Petroleum Reserve--Alaska,were to be subjected to a study which would, within 8 years of enactment of P.L. 96-487, assess the potental oil and gas resources of these lands and make recommendations concerning future use and management of these resources, review wilderness characteristics, and make recommendations for protection of wildlife resources. Findings based on the study were to determine the potential for energy production, impacts on wildlife, the national interest in development of these resources and in protection of wilderness and wildlife. The Act spelled out special special requirements for the study of the lands within the Arctic National Wildlife Refuge, including guidelines to be formulated for protection of wildlife during exploratory activity to assess the oil and gas potential. However, production of oil and gas from the Refuge was prohibited, and development could be undertaken only if authorized by Congress.

2) Oil and Gas Leasing Program for Non-North Slope Federal Lands: Section 1008 of the law required establishing an oil and gas leasing program for the Federal lands of Alaska, outside the North Slope. Excluded from the leasing program are the National Petroleum Reserve, and lands where leasing is prohibited by law, such as in parks and wildlife refuge wilderness areas. The program was to include studies in areas deemed favorable for discovery of oil and gas. The Secretary of the Interior was authorized to issue leases on the lands, and to use only competitive bidding in areas deemed favorable for petroleum discovery. Both exploration plans and development plans were to be required from lessees, subject to approval by the Secretary, and subject to relevant requirements for protection.

The law also required a continual mineral resource assessment program, encompassing oil, gas, and other mineral potential on all public lands in Alaska.

The final resolution of the Alaska lands question, then, was deferred pending further study of the energy and mineral potential of the Federal lands there. Leasing for for oil and gas development was largely on the Outer Continental Shelf, and on State and native lands. Provision was made for leasing on the Federal lands, but subject to further study, and to various requirements for preserving multiple use of other resources of the lands.

Legislative Proposals: Availability of Onshore Land to Energy Development

Both Congress and the Executive Branch expressed interest in increasing production of energy minerals from the public lands, in order to reduce dependency on fuel imports.

There was little legislative action on this issue, but the Executive Branch continued to review the status of the Federal lands and assess minerals and fuels potential. The Federal Land Policy and Management Act of 1976 required that the BLM carry out a review of all withdrawals of the Federal lands in order to revoke those that were no longer levant. Studies by various agencies showed figures of re-up to 64 percent of federal lands subject to some kind of restriction with respect to oil and gas leasing, exploration, and development. However, the withdrawal review effort in the Interior Department, which got fully underway during this period, revealed a number of cases of double and triple counting of acreages under two or more leases.

The debate over withdrawals of Federal land in the Lower-48 States revealed the same opposing points of view that were involved in the Alaska Lands legislation: one side pointing to the doughnut of remaining land not withdrawn, the other to the hole created by the withdrawals. Table 1 gives statistics from a 1980 GAO study of Federal lands in 5 States. Preservationists pointed to the numbers to argue that, of the lands with oil and gas potential, only a small proportion were withdrawn; energy development interests insisted that such an observation was relevant only if all "potential" resources had an equal chance of becoming "real", or if it was known where the best potential lies--information that could only be obtained through additional exploration, including some drilling.

Numerous bills introduced in the 96th Congress dealt with limitation, withdrawals and restrictions on exploration and development on leases that had been let. Many of the bills were designed to increase the amount of public land withdrawn from energy availability. They would have included parts of the Salmon River in the National Wild and Scenic River System, included wilderness lands in Oregon as part of the Wilderness Preservation System, specified public lands and waters in Alaska for inclusion

Table I

WITHDRAWALS OF LAND FROM ENERGY AND MINERALS DEVELOPMENT

State	Acreage Owned by Federal Government	Acreage under lease for oil and gas in 1980	Formally and Administratively withdrawn lands	Withdrawn land with oil and gas potential
Colorado	23,607,946	8,164,472	1,108,000	426,000
Mississippi	1,730,567		120,000	120,000
Nevada	60,506,114	12,601,687	11,670,000	6,558,000
New Mexico	25,873,744	10,265,420	3,887,100	2,957,000*
Wyoming	30,329,555	22,715,754	3,425,000	1,047,000

*Figures on Administratively withdrawn lands with oil and gas potential were not available. This is the figure for formally withdrawn lands only.

Source: BLM Public Land Statistics 1979 for total Federal Lands in each state; U.S. General Accounting Office Report EMD-81-40 for withdrawal figures.

into various Federal preservation systems, and required a coastal zone management plan prior to lease sales in the Bering and Chukchi Seas. One proposal would have had a Federal Oil and Gas Development Corporation exercise sole control over oil and gas exploration and extraction operations on Federal land.

Impediments to leasing would have been reduced or eliminated by some bills in a number of ways. One proposal would have removed administrative restrictions impeding the leasing of energy resources on Federal Lands or on the Outer Continental Shelf and would have established leasing priorities. Under another proposal, competitive bidding would have been required for oil lands previously set aside for military or naval purposes. Another proposal would have authorized additional leases to enable current leaseholders to develop their leases rather than simply hold the land for future contingencies, denying its exploitation to others. Still another bill would have required that all oil and gas deposits on Federal lands be leased competitively.

Restrictive limitations on leases were the subject of other legislative proposals. Procedures would have been established under one bill to encourage utilization of the mineral resources on Federal lands by increasing the maximum allowable acreage which may be exempted from land use planning requirements. The primary term for noncompetitive oil and gas leases would have been reduced to five years from the current term of ten years. In cases where holders of oil shale lands needed adjacent acreage for their operations, one proposal would have made such lands available for lease but not for mining.

Issues Pending for the 97th Congress

The interest in availability of Federal lands for energy development promised to continue in the 97th Congress; increased availability was a major Reagan campaign theme. Reducing the amount of land withdrawn was likely to have a high priority, as was the acceleration of leasing and the reduction in the time delays associated with obtaining operating permits after the leases have been granted.

Outer Continental Shelf Lands: Background

Leasing on the outer continental shelf is governed by the Outer Continental Shelf Lands Act of 1953, as amended by the OCS Lands Act Amendments of 1978 (P.L. 95-372). Prior to the 1978 amendments, leasing had not been on a regular schedule, and goals for leasing had varied from 1 million acres per year in 1971 to 10 million acres per year in 1975. The Department of Energy Organization Act of 1977 (P.L. 95-91) gave a role to the newly established Department of Energy in determining goals for oil and gas production from Federal leases and setting certain diligence requirements; the 1978 amendments, however, provided the framework for a more regular schedule for OCS leasing.

Activity on OCS leasing during the 96th Congress therefore was mainly in the Executive Branch, and concerned establishment of leasing schedules under these 1977 and 1978 laws. Legislative activity was confined largely to oversight of this process.

The June 1979 and June 1980 schedules for lease sales were prepared in accordance with the provisions of the OCSLAA of 1978 and, therefore, reflected the full impact of this legislation. As mandated by the OCSLAA, the proposed June 1979 schedule was submitted to the Congress, State governments, the Attorney General, and others for review prior to approval by the Secretary of the DOI. The proposed June 1979 schedule did not include goals in terms of numbers of lease sales or acreage. However, DOE had established OCS oil and gas production goals for the 1985-95 time frame for use in preparing the proposed June 1979 leasing schedule. The DOI took the position that the proposed schedule would yield about 90 percent of DOE's oil production goal and about 95 percent of the gas production goal.

The June 1980 schedule or 5-year plan was issued after about 1 year of review and after comments had been received from interested parties The schedule called for a total of 36 lease sales during the period of September 1980 through May 1985. Five of these were scheduled as re-offerings. Of the remaining 31, 10 were in Alaska, 4 in the Pacific, 6 in the Atlantic and 11 in the Gulf of Mexico. The plan called for roughly 13.3 million acres to be leased at the average rates of 2.7 million acres per year and 7.2 lease sales per year.

Table 2 shows leases and production on the OCS as of the end of the 96th Congress:

The House of Representatives established a Select Committee on the Outer Continental Shelf pursuant to House Resolution 53. The Resolution was acted upon on March 29, 1979, authorizing the Select Committee through June 30, 1980. The Committee held hearings on 17 occasions from March 1979 through May 1980, on such OCS matters as the status of regulations required by the OCS Lands Act Amendments of 1978, schedules of lease sales and the Department of the Interior's 5-year leasing plan, environmental issues, the President's request for an accelerated leasing program, the safety of mobile offshore drilling units, immigration laws with impact on the provisions of the OCS Lands Act Amendment, bidding systems, bidding systems regulations, and others.

Table 2

OCS LEASING BY REGIONS AS OF DECEMBER 31, 1980

	Region				
	Alaska	Atlantic	Gulf of Mexico	Pacific	Total
Total Acreage (Millions)	548.5	169.8	198.2	49.3	965.8
Number of Sales	4	4	41	6	55
Acreage offered (Millions)	31	3.4	30.3	4.4	41.2
Percent of Total Offered	0.6	2.0	15.3	8.9	4.3
Acreage Leased (Million)	1.2	1.4	14.5	1.9	19.1
Percent of Total Leased	0.2	0.8	7.4	3.9	2.0
Production through December 1979					
Oil (Billions of Barrels)	0	0	4.9	0.2	5.1
Gas (Trillion Cubic Feet)	0	0	43.9	0.1	44.0

Legislative proposals during the 96th Congress which would affect the outer continental shelf centered largely on pollution control issues, specifically oil pollution compensation, hazardous substances control, protection of fishery resources. Another bill would exempt certain types of OCS petroleum from regulation under the Emergency Petroleum Allocation Act.

Pending Issues

Interest in increasing oil and gas production from the OCS is likely to be a continuing issue, with intense concern by those who wish to develop these resources and by those who advocate the protection of certain especially vulnerable areas with other resources at risk such as fishery resources or scenic and recreation values.

POWERPLANT FUEL USE*

Background

The consumption of oil to produce electric power was a particularly visible target for energy policy makers in the 1970s. Oil had only recently become a significant fuel for electric utilities; it was irreplaceable as an energy source for automobiles, but not, in theory, indispensable for power generation; its use by utilities meant, in theory, that they were using less coal, an industry with large domestic resources but a stagnant market. Similar arguments were used against fueling powerplants with natural gas, which also had other essential uses and was competing with coal in the electric utility market. As a result, two major laws were passed previous to the 96th Congress aimed at discouraging the use of oil or gas for electric generation, and secondarily at promoting the use of coal. Continuing dissatisfaction with the results of the legislation led to further proposals in the 96th Congress. Events in the marketplace, however, overtook the logic of the legislation, and it was lost in the pressure of other initiatives.

The history of these attempts to influence fuel choice by utilities illustrates two themes: cost is a dominating factor in such choices, but the flexibility to adjust to cost can be lacking over the short term.

At the end of World War II, U.S. electricity was generated primarily from coal (52 percent) and water power (35 percent). Coal consumption for electricity generation was about 72 million tons. In the next 35 years, coal consumption for electricity generation increased to 570 million tons per year, but coal's share of the electricity fuel market declined somewhat, while water power generation dropped to only 12 percent of total electricity. Much of the new generating capacity after 1945 was fueled by oil or natural gas, with a recent assist from nuclear power, which produced 11 percent of the total in 1980.

This shift from coal to oil and gas as the fuels of choice was the consequence of economics. Low-cost natural gas and oil, either domestic or imported, were cheaper and cleaner than coal, easier to ship and handle, less labor-intensive, emitted fewer particulates, and left no ash for disposal. Coal as a fuel managed to hold its own in those parts of the country near the mines; but even in those areas, it began to lose ground late in the 1960s. Between 1965 and 1972, some 400 power plant boilers, largely along the East Coast, switched to oil, particularly imported oil. The shift was most pronounced in the New England States, which, by 1973, were 94 percent dependent upon oil. But the shift was also strong in urban areas in other parts of the country where air pollution control requirements put further constraints on the use of coal. For new generating capacity, nuclear energy began to assume an increasing role. In the early 1970s plans for future generating capacity called for dramatic shifts to nuclear power generation. As a result, the coal industry stagnated.

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The embargo and the increase in oil prices was followed in 1974 and 1975 by a decline in the proportion of electricity generated by oil, with the difference being filled by new nuclear power units coming on line. The proportion increased again in 1976 and 1977, however, and declined only slightly in 1978. The amount of oil consumed in 1977 and 1978 for electricity generation was greater than in 1973. Consumption of coal for electricity generation, meanwhile, declined slightly in 1974, increased steadily through the next three years and then declined in 1978 because of a long miner's strike. Consumption of gas by utilities declined in the years 1973 through 1978.

Thus, until 1979 the changed economics of oil and coal generation had less effect than might have been expected. Part of this muted effect may have arisen because of price variations. The utilities' cost of oil, which had more than tripled from 1972 to 1974, rose only about 10 percent in the next 4 years. Meanwhile, the cost of coal increased steadily; oil was 2.7 times as expensive than coal in 1974, but only about 1.9 times as expensive in 1978.

Another significant factor may have been new generating capacity. In 1974 and 1975, almost as much capacity came on line with oil as its declared primary fuel as did capacity designed to burn coal primarily. In the next four years, new oil-burning capacity fell off sharply, while completion of coal-burning generating stations increased.

Legislation Prior to the 96th Congress. By authority of several bills passed by the Congress after the 1973 oil crisis, the Federal Energy Administration--later the Department of Energy--ordered numerous powerplants to stop burning oil and gas. However, the process of making these orders effective was lengthy and uncertain.

The first legislation aimed at reducing oil consumption by utilities was the Energy Supply and Environmental Coordination Act (ESECA) of 1974 (P.L. 93-319). FEA's authority to order conversions to coal under ESECA expired June 30, 1975, but was extended by Title I of the Energy Policy and Conservation Act (EPCA), P.L. 94-163, to June 30, 1977, and broadened to permit FEA to order new powerplants and major fuel burning installations (MFBI), primarily industrial steam-generating facilities, to burn coal. (Previously, FEA could order that they have the capability to burn coal but could not require that coal be burned.) ESECA was extended again (to Dec. 31, 1978) by the FEA Authorization Act of 1977 (P.L. 95-70).

ESECA was replaced by the Powerplant and Industrial Fuel Use Act (FUA) of 1978 (P.L. 95-620), a part of the National Energy Act. FUA prohibited any new electric powerplant, with specified exemptions, from using oil or natural gas as primary fuel, or from being constructed without the capability to use coal or another alternate fuel. It also prohibited existing plants from burning natural gas after January 1, 1990, and gave the Secretary of Energy authority to prohibit existing plants that ever had the capability to burn coal or an alternative fuel from burning oil. The prohibitions for existing plants also were subject to exemptions specified in the legislation.

Under ESECA, prohibition orders were issued for 107 units totalling 14,000 megawatts of electrical capacity (MWe). Of these, prohibition orders on 23 units with 2,300 MWe capacity were made effective as of the end of 1979, orders on 36 units totalling 5,800 MWe capacity were outstanding, and orders on 48 units totalling 6,000 MWe capacity were rescinded. In 35 of the 48 rescinded orders, the units were "voluntarily" converted to coal or other alternate fuels, according to the Department of Energy, while in 9 units insurmountable environmental problems led to the rescinding of the order. It is not clear how many of these plants would have been converted in the absence of ESECA orders.

In 1979 DOE issued proposed prohibition orders under FUA for 21 units, totalling 6,800 MWe. None had been made effective by the end of 1980.

The processing of ESECA orders took an average of more than two years for those plants for which the prohibitions were made effective, according to an independent study. Some of the prohibition orders were in process for almost 5 years.

Legislation Proposed: The Powerplant Fuel Conservation Act of 1980

The sharp increase in oil prices in 1979 was accompanied by decreased use of oil by utilities. Nevertheless, rampant inflation, high interest rates, sluggish demand for electricity and reluctance on the part of utility commissions to grant rate increases had put most utilities--especially those most dependent on oil--in deep financial difficulty, thus impeding their efforts to convert oil-burning plants to handle coal. In addition, such conversions, if carried out under Government mandate, would mean that they had to meet less stringent air quality standards than if they were carried out without a Government order; but those orders were uncertain and slow to come.

In response to these defects, and with the support of the coal and electric industries, the Carter Administration on March 6, 1980 submitted "legislative specifications" for a two-phase program designed to reduce oil consumption by utilities by 400,000 barrels per day by 1985 and reduce oil and gas consumption by 1 million barrels per day equivalent by 1990.

These goals were to be met by adding two new features to existing oil-backout legislation. In order to make it possible for utilities to make oil-to-coal conversions, or to build alternative capacity allowing the retirement of oil-burning plants, Federal grants totalling $10 billion would be made for partial payment of the capital costs of such activities. In addition, action on petitions for exemptions was to be accelerated.

The 1985 goal was to have been reached by ordering the conversion of 107 generating units, some of which had already been named under ESECA or FUA. These units, listed in the legislation, would have been prohibited from burning oil or gas 90 days after enactment of the legislation, unless a petition for exemption was filed within that time. DOE would have been required to issue a final order either granting or rejecting the petition within 180 days of receiving it (with provision for extension by the Secretary). Grants totalling $3.6 billion would have been available to meet part of the capital costs of converting the 107 listed units. An additional $100 million would have been available for coal-cleaning facilities, and $300 million for equipment to reduce emissions from existing coal-burning facilities that already met air quality standards.

The further savings in oil and gas consumption by 1990 were to be met by making grants totalling $6 billion to help utilities displace those fuels in plants not capable of conversion. A system of "fuel displacement plans" for the utilities involved were to be drawn up to determine how the money would be granted.

Senate Amendment. The Administration proposal was introduced in the House as H.R. 6930 and in the Senate as S. 2470. On June 16 the Senate Committee on Energy and Natural Resources reported out S. 2470 with several substantial amendments:

1. The list of 107 units submitted by the Administration for prohibition under Phase I of the plan was trimmed to 80 units at 38 powerplants owned by 26 utilities, with a total capacity of 16,500 megawatts electric (MWe).

2. Grants under Phase I were limited to the plants listed. A utility would be automatically eligible for a grant of 25 percent of the qualifying capital costs of a conversion. Supplemental financial assistance would be provided, based upon financial need, including grants not to exceed 25 percent of the qualifying capital costs, loans not to exceed 50 percent, or a combination of grants or loans within those limits, with the total financial support limited to 75 percent of the qualifying capital costs.

3. The Phase II program for incentives to utilities to reduce oil and gas consumption was dropped.

4. The provision in the 1978 Fuel Use Act prohibiting the use of gas as a primary fuel after 1990 was amended to exempt existing plants from the prohibition until the end of their book service life if it extended beyond 1990.

5. The authorization for advanced emission-control equipment was increased from the Administration's $300 million to $450 million, and the coal washing program from $100 million to $150 million.

The Senate passed the new version of S. 2470 on June 24, 1980. In response to criticism of the amendment allowing extended burning of gas, a floor amendment proposed by Senator Bennett Johnston was adopted requiring utilities benefitted by the provision to report plans for constructing new coal-fired plants to the Department of Energy and the Congress. Despite that amendment, the National Coal Association, which had supported the original bill, voiced its opposition to any version that contained the "off-gas" amendment.

Issues in Debate. The quick Senate action on the proposed measure was not accomplished without pointed debate, and the questioning continued as the House took up the proposal. Among the issues raised were:

1. Was legislation necessary? A major issue involved in Phase I of the oil-backout plan was whether it was necessary--that is, whether the savings in oil consumption under the plan would not be largely achieved without it, either voluntarily by utilities because of economic factors that made coal more attractive than oil as a boiler fuel, or as a result of Federal actions authorized by existing legislation.

Contributing to the argument that the additional measures were unnecessary was the fact that most of the units included in the prohibition list had already been issued prohibition orders under ESECA or FUA, and a significant number were either already burning coal or being converted to do so. In favor of the proposed program was the argument that the existing legislation was slow and uncertain, and that conversion was slowed because utilities could not raise the capital needed. Grants and accelerated procedures would serve to realize oil savings quickly; those savings would be reflected immediately in low rates for consumers as the lower fuel costs of coal were passed through to them, it was argued.

2. Grants or loans? Another issue was the question of alternative methods of funding the Phase I conversions, assuming that utilities needed financial aid in order to carry them out. One suggested alternative was federally mandated rate restructuring that would favor conversions. Another was that the conversions be supported by Government loans, rather than grants--a method that was criticized on the grounds that it would increase the general indebtedness of the utilities and make it more difficult for them to raise capital for needed construction.

3. Phase II effectiveness. The Phase II program involved more Federal grant money than Phase I to achieve less precise goals, since it involved reducing a utility's overall oil consumption rather than conversion of specific oil-burning plants. Proponents argued that this approach was necessary because some areas of the country used large amounts of oil for electricity generation in plants that were not capable of conversion to coal. Almost one-quarter of the total oil used to generate electricity in the United States was consumed in California, for example, but no California plants were included in the Phase I "coal-capable" list.

In effect, this part of the proposal consisted of compensating utilities for not using existing oil-generating capacity and providing needed power from other sources. Proponents of the program argued that it was the most effective way to reduce oil consumption in areas where coal-capable facilities did not exist. Opponents suggested that a trend away from oil use by utilities already was in motion, and that the acceleration to be derived from the Phase II grants would be a less efficient use of public funds than other energy programs might be.

4. Environmental questions. A major question raised by efforts to reduce oil-burning by utilities was its effect on air quality. The conversion of powerplants to coal burning was expected to increase pollution levels, especially in the Northeast, although by how much was open to question. For example, EPA estimated that sulfur oxide emissions would increase by 330,000 tons per year, while yearly nitrogen oxide levels would go up by 200,000 tons as a result of the proposed conversion program. Although this amounted to an increase in total powerplants emissions of perhaps less than 1 percent, increases in the Northeast would be on the order of 15-20 percent, according to the EPA.

DOE and industry estimates of increased pollutant levels were much lower. For example, DOE estimated that sulfur emissions would rise by 220,000 tons per year, while industry's estimate was only 50,000 tons. The Edison Electric Institute estimated that emissions in the Northeast would increase by 0.8 percent to 2.8 percent because of Phase I. One of the key reasons for industry's low estimate was their belief that many of the units scheduled for conversion would not do so due to their age. From an air quality standpoint, conversion of existing plants could take place without violating environmental standards. This could be accomplished because powerplants that were not new were regulated under State Implementation Plans which, in general, permit much higher levels of emissions than do New Source Performance Standards. The proposed legislation included several approaches to environmental impacts from increased coal burning. But environmentalists and other critics viewed the conversion plan with considerable concern. Although they recognized that the plan prohibited violation of ambient air quality standards, nevertheless they believed the increased levels of pollutants, especially oxides of sulfur and nitrogen, would worsen an already serious and apparently growing acid rain problem. Should there be significant increases in sulfur emissions, there would most probably be an increase in acid precipitation. Most of the plants scheduled for conversion were in the East, the area where the acid rain problem apparently was getting worse. Furthermore, the proposed conversion came at a time when the United States and Canada had entered into discussions on means to reduce acid rain. The Canadian government expressed concern over what it perceived as a proposed U.S. action which possibly could increase the amount of acid-rain-producing pollution by 10-15 percent.

House Action. Resolution of the various issues involved in the proposal proved impossible in the House. After hearings by the Commerce Committee's Energy and Power Subcommittee, a new version, H.R. 7809, addressing some of the environmental and other questions, was introduced by Subcommittee Chairman John Dingell. A majority on the Committee could not be formed, however, and the bill was not reported out.

Policy Implications and Pending Actions

The many questions raised about the proposed legislation were debated in the context of continuing increase in OPEC prices, and the wrenching turmoil of the Iranian hostage crisis. The instability and economic unpredictability of oil supplies had clearly had an effect on consumption by the utility industry, and when the data were in they showed that oil use had dropped 600,000 barrels per day in 1980 compared to 1978 consumption--more than the proposed legislation had been expected to save by 1985.

With a new Administration, it appeared unlikely that the combination of grants and regulation would be reintroduced, but a number of problems with the existing system remained to be resolved in the 97th Congress. Coal industry spokesmen were still dissatisfied with the rate of conversion of coal-capable power plants, and were calling for revisions of the Clean Air Act--up for renewal in the new Congress--to allow the burning of more coal. They also opposed any relaxation of the Fuel Use Act's prohibition on the use of gas, at least without coupling it to deregulation of gas prices. Utilities, on the other hand, were adamant that FUA's off-gas provision had to go, as was the gas industry. Utilities also wanted to protect and expedite the process of being ordered to convert oil plants to coal, thereby avoiding the requirements of New Source Performance Standards.

Thus the Fuel Use Act, the Clean Air Act, and the Natural Gas Policy Act, all operated in one way or another to affect the fuel mix of the Nation's electric utilities. Either together or one piece at a time, all could be expected to receive the attention of the next Congress.

REFINING POLICY*

Background

Prior to the 96th Congress, U.S. petroleum refining policy was not a matter of major concern. Aspects of petroleum refining would surface occasionally as an issue, such as the small refiners' bias in the entitlement program or as part of a divestiture proposal, but seldom was the refining industry in general the object of congressional interest. In the Energy Policy and Conservation Act, passed in December 1975, the Congress gave the President the authority to require adjustments in the operations of any refinery in the United States with respect to the proportions of refined products made there. Under its provisions, the President can order a refiner to increase his yield of one product (such as fuel oil) and to reduce the output of others (such as gasoline).

With those exceptions, congressional attention was, for the most part, focused much more closely on production and marketing, where problems were more apparent. It was widely assumed that, while refining was a necessary intermediate step connecting production and marketing, it would continue to serve that function without specific congressional attention.

However, the refining sector of the petroleum industry became a source of increasing concern in the 96th Congress, not because of any one event, but rather the culmination of a number of independent factors. Together, they created the possibility that necessary refining capacity might not be sited, financed, constructed, or operated. Access to crude oil at equitable prices, environmental controls, siting problems, the high cost of capital, government regulation, the increasing sulfur content and gravity of available crude oil, competition from foreign refiners, changing product requirements, and price controls, were among the factors considered negative. They were limiting the ability of refiners to adapt to mandated changes in the fuel mix (away from leaded gasoline toward unleaded; away from residual fuel oil toward low-sulfur distillate) and to process increasingly heavy and high-sulfur crudes. This was emphasized dramatically in the gasoline shortage, particularly of unleaded, that persisted in varying degrees throughout 1979.

The implications of this problem on national energy policy were apparent. If refiners would not or could not develop the necessary capacity both to process available crudes and to produce the required fuels while the demand for petroleum products was at record levels, then continued shortages of greater intensity and duration seemed unavoidable. Domestic refiners were clearly at a crossroads on this matter, but they had not made the necessary decisions, even when permitted by regulations, because of a number of uncertainties. These include the following questions:

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(1) Would gasoline demand peak in the 1980s or would it continue to rise?

(2) If demand did peak, would it pay to invest in additional capacity or reconfiguration?

(3) With domestic oil prices decontrolled, would domestic refiners be protected from competition from foreign refiners whose costs may be lower?

(4) Could any new refinery be justified, regardless of the supply and demand situation?

(5) Was it worthwhile for refiners to pursue a new refinery through the environmental permitting procedures, that in some cases had proven to be costly, and others, total, barriers to new construction?

Problems Facing Refiners. Refiners face major investment decisions to respond to changing U.S. energy demands; including decisions to "heavy-up," "sour-up," "octane-up." To "heavy-up," refiners must increase their ability to process the heavier, more viscous crude which is rapidly replacing light crude oil both domestically and internationally. It is far less desirable than light oil to refiners because it yields large fractions of light products (such as gasoline and distillate fuel oil) only with intense processing--a capability not found at many U.S. refineries. In order to "heavy-up," refiners must add new equipment for more extensive downstream processing.

To "sour-up," refiners must increase the capacity of a refinery to accept high-sulfur crudes. Many of the refineries in the United States were designed to operate on the "sweet" (low-sulfur) crudes that were for many years produced domestically in large quantities and imported from Canada in large amounts. Domestic production is much lower now than when many U.S. refiners were built, and the Canadian imports have been phased out except for exchange oil and some heavy oil. The refiners that operate these refineries must compete for diminishing supplies of sweet crude. Often they were required to buy large amounts of "sour" (higher sulfur) crude in order to gain access to the light crude. Most of the new crudes that have been discovered and produced in recent years are sour and must be blended with sweet crudes to be used in many domestic refineries. This trend is virtually certain to continue. Refiners that do not make the investments that will allow them to use more sour crude will have a much more difficult time finding feedstock and will almost certainly pay a high premium for it when it can be found.

To "Octane-up," refiners must increase the octane of their gasolines, particularly the unleaded ones, to provide better performance and fuel economy. Refiners have been meeting octane requirements, in part, by using substances which are expensive and which could contribute to shortages of petrochemical feedstocks. To "octane-up" also requires a large amount of processing equipment which is both very expensive and very difficult to install because of the environmental permits required.

Complicating these major investment decisions is the relative unpredictability of demand. The product mix is changing rapidly, and higher prices for all products, lower demand for residual fuel oil in industries and utilities, fuel efficiency standards for automobiles, and conversions from distillate fuel oil use to natural gas have made it much more difficult to anticipate product demand very far into the future. As a result, many refiners are reluctant to commit large amounts of capital to build or to reconfigure plants which might prove to be uneconomic. Even though refining has recently become a much more profitable activity for petroleum companies, the size of the investments in question are so large that even large multinational oil companies must consider them carefully before making commitments.

Many decisions will be forced by circumstances clearly outside the control of refiners. The availability of foreign oil upon which domestic refiners are increasingly dependent is extremely uncertain because of international political problems which could lead to future embargoes or cutbacks. Even in the best possible case, foreign oil is likely to become even more expensive and more difficult to obtain. To the extent that it continues to be available, it will probably be heavier in gravity and higher in sulfur content than in the past, making further reconfiguration of existing refineries essential. Several OPEC members, as well as some major oil-producing non-OPEC members, have indicated their intention to require the importers of crude oil to import petroleum products refined in the exporting countries. At the same time, European and Caribbean refiners are faced with a large surplus capacity which, with some modification, could compete with domestic refiners to some extent in the U.S. market for light products.

Many refiners fear that under decontrol they will no longer have access to crude oil at lower prices than foreign refiners, and the higher transportation costs (due to

Jones Act requirement that U.S. ships be used for international shipment) and environmental requirements will put them at a disadvantage with foreign refiners.

If these factors lead to large-scale product imports and to the development of foreign refining capacity built primarily to supply the U.S. market, several predictable consequences would have a direct effect on U.S. policy: production control during emergencies would be reduced (assuming crude continued to be available), foreign refining capacity would be more difficult to defend, Government ability to mandate yield shifts as needed would be weakened, the balance-of-payments deficit product would be increased because of the value added to the crude oil by refining, and the United States would lose jobs and tax revenue. This might be offset, however, by the fact that foreign refineries would probably be less costly to site and to operate, possibly reducing product prices to consumers. It would also more closely tie OPEC refinery investments to the U.S. market, greatly increasing the economic cost to the producing countries if they embargoed shipments of those products to the United States. Such capital-intensive OPEC investments in the making of refined products would be affected to a much greater degree than would their current exports of crude oil, which can easily be moved to other markets.

Regulatory Uncertainties. Even when refiners are willing to make the investments necessary to build or to reconfigure a refinery, other obstacles can delay or terminate a project. The body of regulations generated by environmental legislation in the late 1960s and early 1970s has made the siting and permitting of new facilities and expansion or reconfiguration of existing ones extremely difficult in some cases and virtually impossible in others. In some States, strict interpretations of these laws have discouraged the installation of the additional downstream processing equipment needed to desulfurize crude and to make light products out of heavy oils because its operation would increase emissions. In blocking these changes, however, the statutes have limited the ability of refiners to produce more unleaded gasoline and low-sulfur residual fuel oil, which would have reduced air pollution at the consumer level.

Related Issues. Other issues also affect refining. Increased interest in gasohol revealed a lack of methanol production and mixing facilities. Deficiencies in crude oil and product transportation systems, particularly pipelines and deepwater ports; health hazards to refinery workers; encouraging refining of waste oil and increasing energy conservation in refineries are issues that were debated in Congress for years without clear results.

Refiner Groups. A complicating factor in the national refinery picture is the existence of three separate and distinct groups of refiners whose interests and opinions are not always the same.

The multinational oil companies have the widest range of activities of the three groups. Refining is just one part of the operation of most multinationals, but one that is demanding an increasing share of their attention. The large multinational oil companies have an advantage over their less diversified competitors through their foreign production, refining, and marketing arms, as well as their domestic operations. They can shift profit centers to take advantage of changing national policies and taxation, and are far less likely to seek protection against competition. The multinationals will probably be the major corporate beneficiaries, along with foreign refiners, of the decontrol of product prices. Crude availability was a particularly vexing problem for the refining divisions of these large corporations, before decontrol, for they had to meet not only their own crude needs, but also those of certain domestic companies (if so ordered by the Department of Energy) which were unable to find crude. These companies provide the largest share of refined products, particularly the more sophisticated ones (such as unleaded gasoline) and their refiners tend to be larger, more complex, and more numerous, and often more efficient than those of all but the largest domestic refiners.

The domestic (noninternational) refiners are a much more diverse group. Many are major companies with sizable domestic production of crude oil, although some have limited holdings or none at all. As a result, many of them are likely to benefit from crude oil decontrol, but they are also likely to face increased competition from foreign refineries (including those of the multinationals). The refiners in this group who do not have large crude production in the United States are likely to be disadvantaged by decontrol to some degree because their higher acquisition costs will not be offset by higher profits on crude production.

Independent refiners are an even more heterogeneous group. They vary greatly in size and in type of operation. Most are small, domestic companies which often specialize in particular products and which have little or no crude oil production. Although many market their own products, refining dominates their operations and is not just part of it as in the other two groups. Many independent refiners were concerned that the end of oil price controls would jeopardize their survival because of the inherent operational advantages, including economic efficiency, of the other two refiner groups and of foreign refiners generally. An important distinction should be made, however, between the established independents and those built recently to take advantage of the small refiners bias.

All three groups, however, have many problems in common. Their priorities are different because their circumstances are different, but all of them must be concerned about crude availability, environmental problems, foreign competition, the price they will pay for their crude oil, and their need to meet changing markets.

Legislative Proposals in the 96th Congress

Several refining-related bills were introduced in the 96th Congress, indicating the growing level of Congressional concern about this complex issue.

By far the most significant refining bill was the Domestic Refinery Development and Improvement Act (S. 1684), introduced by Senator Bennett Johnston. The bill was aimed at relieving the economic disadvantage domestic refiners would face following decontrol of domestic crude prices. It would have established a Refinery Development Fund, using fees on imported refined products, which would be paid to small and independent refiners, either directly or in the form of rebates to consumers of their products. It would also have established a program of loan guarantees for financing of construction of new, expanded or retrofitted refineries, and for financing the purchases of independent and small refineries, and revised the process for obtaining the necessary permits for refinery construction and improvement. Hearings were held on S. 1684 by the Committee on Energy and Natural Resources but the bill was not reported out by the Committee.

Other bills introduced included H.J. Res. 371 (Peyser), which would have required each importer, producer, refiner, distributor, and supplier of crude oil or refined petroleum products to submit monthly reports to the Secretary of Energy on its total refining capacity, the percentage of such capacity currently utilized, its crude oil supplies, the location of such supplies, and its inventory of refined petroleum products. It would have directed the Secretary to publish such information.

H.R. 4512 (Ottinger) would have directed the President to exercise the authority granted under the Emergency Petroleum Allocation Act of 1973: (1) to reduce crude oil inventories; and (2) to distribute the crude oil thus made available to refiners who would process such oil into gasoline, diesel fuel, and Number 2 fuel oil.

H.R. 6129 (Leach) would have amended the Energy Policy and Conservation Act to direct the Secretary of Energy to establish a program for the creation and maintenance of an Industrial Petroleum Reserve as part of the Strategic Petroleum Reserve. It stated that such a reserve should consist of petroleum products acquired by refiners and importers and stored by them in readily available inventories, in an amount of at least 250 million barrels.

Representative Don Young introduced H.R. 7574, which would have amended the Mineral Leasing Act to specify a maximum refining capacity in order for a refinery to qualify for preference in the sale of any U.S. royalty oil by the Secretary of Energy.

S. 1509 (Pell) would have directed the Secretary of Energy to establish a program to promote the development of a synthetic fuels industry in the United States. It would have required that domestic refiners of crude petroleum products include, as part of the raw material feed into their refining processes, specified percentages of synthetic fuel, and imposes civil penalties for violations.

Senator James Sasser introduced S. 1601, which would have amended the Department of Energy Organization Act to direct the Secretary of Energy to compile a report of the crude oil supplies received at all domestic refineries and to take specified actions to keep the production levels of the major oil producing companies at a specified level.

Issues Pending for the 97th Congress

Virtually all of the refining issues are affected in some way by other issues. Siting delays add to construction costs, the limited availability of low-sulfur crude oil adds to air pollution problems, and shortages of pipeline capacity limit the utilization of existing refineries. That is one reason that many refining issues persist; they are difficult to deal with effectively because they are complicated by their association with other issues.

A fundamental question that Congress will face in its consideration of refining is: "To what extent should refining decisions that were heretofore made in the private sector now be made by Government?" This must be followed by a corollary question: "Which controls should Government initiate and which should it relinquish?" This will depend, of, course, to a great deal upon goals for refining policy which have yet to be agreed upon. Certainly, Government is already involved in regulation of refinery operations and related activities. Some of these regulations are widely perceived as impediments to the improvement of U.S. refining capacity.

COAL SEVERANCE TAXES*

Background

In April 1975, Montana passed the highest coal severance tax in the nation. Estimated at about 22 percent of the F.O.B. price of the coal (sub-bituminous), the State collected over $50 million from the tax in 1979. In imposing this tax, the Montana Legislature declared:

> "Coal in Montana, when sub-bituminous and recoverable by strip mining is in sufficient demand that at least one-third of the price it commands at the mine may go to the economic rents of royalties and production taxes." 1/

This action by Montana, along with similar but less drastic actions by Wyoming and North Dakota, angered Midwest and Southwest utilities which use these States' low-sulfur coal in the generation of electricity. In 1978, the utilities, along with the State of Texas, challenged the severance tax rate of Montana on the grounds that it violated the interstate commerce clause of the Constitution. The case lost in the Montana State courts, and was pending before the U.S. Supreme Court throughout the 96th Congress.

The search for relief from Montana's, Wyoming's, and North Dakota's severance tax rates also led Southwest and Midwest interests to the Congress. Congressmen from Midwest and Southwest States claimed that such tax rates place an unreasonable burden on consumers in their States, and had no relationship to the cost of alleviating extraction impacts.

Although most of the attention was on coal severance taxes, the lion's share of total severance tax receipts is collected on oil and natural gas. For example, Texas collected about $1 billion in oil and natural gas severance taxes for 1979, approximately 40 percent of all mineral severance taxes collected. In total, oil and gas severance taxes accounted for over 85 percent of all mineral severance taxes compared with 8 percent for coal.

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* by Larry B. Parker, Environment and Natural Resources Policy Division.

1/ Cited from Blackstone, Sandra L. Mineral Severance Taxes in the Western States: A Comparison. Golden: Colorado Energy Research Institute, August 1979.

No opponent of Montana's and Wyoming's severance tax rate argued that States did not have a right to impose such taxes. Generally, they saw severance taxes as a legitimate means by which the resource producing State can collect revenue to alleviate the impacts of the resource extraction. Rather, the issue revolved around the definition of "reasonable" burden. Because most Montana and Wyoming coal is exported, most of their severance tax is exported along with the coal. Opponents of the Montana and Wyoming severance tax rates point to the disparity between these States' tax rates and those of other producing States. Severance tax rates vary from zero in Illinois to 30 percent of gross value (before deductions) in Montana. Wyoming has a severance tax rate of 10.5 percent and an average ad valorem rate of 6.5 percent. Most coal-producing States have coal severance tax rates under 6 percent. Also, opponents of high severance taxes point to the distribution of the revenues collected (much of which goes into trust funds or the State general fund) to argue that they go beyond what is needed to alleviate impacts.

Since much of Western coal is under Federal lands, opponents of high severance taxes also argued that they constrain development of these lands to the detriment of a national policy of increased coal use. As stated by Senator Lloyd Bentsen of Texas:

> These energy resources--coal, natural gas, and oil shale--are a national treasure belonging to all the American people. We must not have a domestic OPEC. This legislation [limiting State severance taxes] will guarantee the future availability of essential energy sources free of confiscatory and unjustifiable taxes. Furthermore, it will help pave the way for greater domestic coal production and reduce reliance on petroleum imports. 1/

The legislation Senator Bentsen referred to, limiting severance taxes to 12.5 percent, would have applied to two States, Montana and Wyoming. They are two of only six coal-producing States that have set up a local impact fund administered by the State to assist local areas impacted by resource extraction. Besides the local impact fund, both States have set "trust funds" as a hedge against the time when their resources run out. As explained by Senator Max Baucus:

1/ Bentsen, Lloyd. In Remarks in the Senate. In support of S. 1778. Congressional record [daily ed.] September 19, 1979: S. 13017.

> I should point out that Montana's citizens voted 2 to 1 in 1976 to create this trust fund. They could just as easily have voted for immediate tax relief. But we must recognize that Montana's coal is a nonrenewable resource. Some day it is going to run out. Montanans have long experience with natural resource development. We know that the costs of development do not end when the resources are gone. Fabulous gold deposits and then fabulous copper reserves were exploited--and sent out of State. Today these resources are largely gone. But the environmental and social damage remain--and is still being paid for by Montanans. Montanans also watched the coal boom turned to bust--the abject poverty. Mr. President, Montanas believe that we should not come to the Federal Government for help in dealing with the problems of energy development. So, we have moved to fill that void by imposing a reasonable and responsible tax on coal. 1/

The conflict over whether a trust fund (which other States besides Montana and Wyoming have) is a legitimate use of severance taxes is, in part, a conflict over philosophy. Those in favor of trust funds feel that mineral deposits are the natural heritage of all the people within a State, and therefore future generations also have an interest in their use. Hence, States are justified in saving some of the compensation from the irretrievable loss of the resource for future generations in the form of a trust fund. Opponents disagree in two ways. First, opponents point out the fact that much of Montana's and Wyoming's coal is under Federal, not State lands, and therefore the natural heritage of the coal is the Federal Government's, not the State's. Second, opponents argue that the only legitimate use of severance taxes is to alleviate adverse impacts from mineral extraction; that the economic benefits from that activity are adequate compensation for the State.

Legislative Proposals

Four different bills were introduced in the 96th Congress to limit to varying degrees the taxing capability of States. As shown in Table 1 below, the bills varied in the scope of their limitations, although they

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1/ Baucus, Max. In Remarks in the Senate. Montana severance tax on coal. Congressional record [daily ed.] November 6, 1979: S. 16008.

were focused on coal severance taxes since coal was the only energy resource currently taxed at a rate of more than 12.5 percent.

TABLE 1 SEVERANCE TAX LIMITATION BILLS

Bill	Resources Included	Amount of Production Included	Rate Limit
H.R. 6625	Coal	All coal destined for interstate commerce	12.5%
H.R. 5294	Coal	All coal produced from Federal lands	12.5%
S. 2695	Coal	All coal produced on Federal or Indian lands destined for interstate commerce	12.5%
S. 1778	Coal Oil Natural Gas Oil Shale Other energy sources	All energy resources produced from Federal lands	12.5% with provisions for higher rates

Each of the four bills had a different scope of impact as to the resources and percentage of production covered. H.R. 6625, S. 2695, and H.R. 5294 covered only coal; hence, rates on other resources, such as oil shale, uranium, oil, and natural gas, could have gone as high as a State cared to impose. S. 1778 broadened the resource scope to include all energy sources. However, energy sources are not the only resources subject to severance taxes. In fact, in 1979 Minnesota received more money from its severance tax on iron ores (taconite, semitaconite, and iron sulfides) than Montana did from its coal severance tax. These bills would have placed a limitation on some energy resources, particularly coal, but did not contemplate a comprehensive limitation.

While H.R. 6625 covered all coal destined for interstate commerce, S. 2695, H.R. 5294 and S. 1778 covered only resources produced from Federal lands. Although this limiation would have a significant effect on Western land, it would have had no effect on Eastern coal States and Southern and Southwestern oil- and gas-producing States which have little Federal land.

A third question of scope was the breadth of the limitation on State taxing capability. Severance taxes are only one of many taxes producing States can place on resources mined in their States. Privilege taxes, conservation taxes, mining occupation taxes, excise taxes, and local taxes such as ad valorem, are some of the various taxes levied on mineral resources. In fact, West Virginia calls its mineral taxes a "business and occupation tax" and not a severance tax. Whether these other taxes would have been included under H.R. 6625, S. 1778, and S. 2695 was unclear. If not, then a significant loophole could exist for producing Staes to avoid the limitations. If they were included (as in H.R. 5294), the question of Federal reach with respect to the taxing power of the States was raised. This would be particularly true if the limitation included ad valorem tax, which historically has been a State and local prerogative.

H.R. 5294 was introduced on September 14, 1979 and referred to the Committee on Interior and Insular Affairs where nothing happened. The second House bill, H.R. 6625 1/ was introduced February 26, 1980, and referred to the Committee on Interstate and Foreign Commerce. Assigned to the Subcommittee on Energy and Power, hearing were held on March 24 and June 5, 1980. Debate during the hearings revolved around five questions: (1) Were high severance tax rates impediments to increased coal production? (2) Was the tax burden assumed by out-of-State consumers reasonable? (3) Were the tax rates fairly relatd to costs and needs? (4) What would be the impact of a limitation? and, (5) Was a limitation constitutional?

Each side in the debate attempted to answer these questions in a way that was favorable to their point of view. For example, in discussing "reasonable" tax rate, proponents of limitation tended to compare Montana's and Wyoming's tax rate with other coal producing States, minimizing inherent differences in col prices and the impacts of development between them. Opponents of limitation tended to compare Montana's and Wyoming's tax rate with oil and gas tax rates on an energy-content basis, minimizing inherent differences between the resource products.

The opponents of a coal severance tax limitation were outnumbered in the Commerce Committee, which voted out the bill on September 16, 1980. It was reported to the full House December 4, 1980. The House sequentially referred the bill to two other committees, Committee on Interior and Insular Affairs, and the Committee on the Judiciary. No further action was taken by the House.

1/ Two other identical bills, H.R. 6654 and H.R. 7163 were also introduced in the House and referred to the Committee on Interstate and Foreign Commerce.

In the Senate, two bills were introduced during the 96th Congress. On September 19, 1979, Senator Bentsen introduced S. 1778; it was referred to the Committee on Energy and Natural Resources, but no action was taken. S. 2695 was introduced May 14, 1980 and also referred to the Energy Committee. Sponsored by Senator Dale Bumpers, the bill was referred to his subcommittee for hearings. During those hearings, the debate was similar to that of the House, except that there was more attention to the Federal and Indian lands issue. After the hearings, no further action was taken by the Senate.

Issues Pending for the 97th Congress

The initial debate on coal severance taxes raised several questions concerning equity and the role of the Federal Government, but provided no solutions or consensus. Among the more important questions remaining are the following:

1. Is the Congress the proper arbitrator of this dispute? Should the Congress interfere with a traditional right of the State to impose a severance tax?
2. What is the likely outcome of a limitation? Would such a limitation raise so much ill-will as to pose a barrier to futher Western energy development?
3. Is it the role of the Fedeal Government to define what costs and needs are appropriately covered by a severance tax? What criteria should be used? Should individual States make that determination?
4. Are high severance taxes a major impediment to a national energy goals? Would a 12.5 percent ceiling improve the situation or be a barrier to further development?
5. Would a 12.5 percent limitation encourage other States to raise their rates to this ceiling, costing consumer States more than the present situation does?

In many ways, this is a debate over the proper role of States and the Federal Government in energy policy.

By imposing high severance tax rates, the Western coal-producing States are attempting to influence the rate and manner by which their resources are exploited. Faced with massive social, economic, and environmental impacts from energy development, these States are attempting to avoid having the history of Appalachia repeat itself. Consumer States feel that current law provides this kind of protection and therefore high severance tax rates are exploitative. To stop what they see as exploitation, consumer States have sought relief from the Congress. These efforts to impose a Federal "solution" to the severance tax problem will likely continue in the 97th Congress.

INCREMENTAL PRICING OF NATURAL GAS*

Background

The concept of incremental pricing applied to natural gas dates back to the early 1970s when gas supplies were being curtailed to existing users and new hookups were being prohibited. In response to these shortages supplemental supply projects were proposed. The price gap between the historic cost of gas and the cost of replacing it with supplements (LNG, synthetics from oil, coal or other sources, etc.) has always been large, given the fact that many of these projects would have produced gas at costs above that of even the most expensive imported oil. The organizations proposing construction of high-cost supplemental facilities were chiefly interstate pipelines which had (and still have) a great proportion of their conventional natural gas supplied under contracts signed during periods of low, regulated wellhead prices. These pipelines could "roll-in" high cost supplements with low priced old gas and still deliver a product whose average price did not rise much tc reflect the fact that it included some very expensive incremental supply. In this way a new customer, or a consumer who would be curtailed absent the supplemental gas, could be served without that user actually paying the supplement's full cost himself. In one sense, this marginal consumer gets a subsidy from other customers who do not need the supplemental gas yet have to pay prices reflecting part of its cost.

Incremental pricing was intended to keep pipelines from the raising average cost to every user, and to cause the burden of high priced supplies to fall on the incremental user. The residential consumer would be protected from the marginal cost of gas for some time. Incremental pricing would be applied first to large users, who were not only more able to switch to the most economical fuel--~~thus~~, keeping prices from exceeding market levels--but also more able to absorb much of the higher cost of new gas for several years.

For this reason, incremental pricing became an important factor in the debate which ultimately lead to the enactment of the Nutural Gas Policy Act of 1978 (NGPA--P.L. 95-621). Indeed, all of Title II of the law addresses this issue.

Incremental pricing played a role in gathering the coalition of anti-deregulation Members in support of the

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NGPA compromise during its enactment in the 95th Congress. These legislators were concerned that the residential consumer be protected against rapid price escalation. The fact that incremental pricing appeared to offer substantial protection to small consumers for roughly five years after NGPA enactment enabled some Members to vote for the compromise. Thus, incremental pricing became a primary factor in enhancing this legislation's base of appeal, particularly in the House of Representatives. Whether or not those involved in the compromise fully appreciated the complexities of the incremental pricing plan that they delineated in Title II of NGPA is another matter. Those difficulties came to light as the congressional discussion began in the 96th Congress.

Title II prescribed that the Federal Energy Regulatory Commission draw up rules that would:

(1) within 12 months after NGPA enactment, incrementally price fuel used in large (300 Mcf per day) industrial boilers; and,

(2) within 18 months incrementally price fuel to all large industrial users under a Phase II plan, in such a way that 95 percent of boiler fuel consumption would be subject to coverage. The law mandates an incremental price to be the BTU equivalent of oil fuels, specifically the price of No. 2 fuel oil, unless FERC determines otherwise. Phase II was subject to legislative veto by a majority vote of either House as provided for in the law.

House Action

NGPA required that FERC initially implement an incremental pricing plan which would raise the price of boiler fuel consumed by large users to the equivalent of high sulfur residual fuel oil. While this caused some early controversy, the first phase was handled with relative ease, since it resulted in price patterns for most pipeline systems which were not materially different from what would have otherwise existed. Its implementation did, however, highlight many administrative and economic problems which were unanticipated by the legislation's authors. This led the gas pipeline industry to fear that Phase II would drive away industrial consumers, which would in turn lead to underutilization of pipeline facilities and higher unit operating costs. This could be a cascading problem, with higher tariffs resulting in more and more load loss and continuously deteriorating operating economics.

Even before the Phase II plan was announced, the gas industry launched an extensive lobbying campaign to defeat it. When FERC issued its incremental pricing rule on May 6, 1980, opposition to the measure focused on the estimate that it would cost industrial users an extra $1.3 billion to $1.6 billion annually, while saving residential users only $23 each. Floor debate on the Phase II rule expanded to include a proposal to repeal all of Title II, killing incremental pricing completely. H.R. 5862 (Pryor and Stockman) S. 2392 (Lugar and Stevenson), incorporating that proposal, were debated briefly. However, it became clear that while Phase II had little support, wholesale modification of NGPA by repeal of Title II could reopen the more controversial matter of natural gas pricing. So, despite support of Phase II by key congressional energy leaders, a measure providing legislative veto of Phase II--H. Res. 655--was reported out of the House Commerce Committee on May 6 (H. Rept. 96-938). The vote took place on May 20. Phase II was turned down by an overwhelming margin: 369-34.

Policy Options and Issues Pending

The defeat of Phase II left incremental pricing in limbo. As the 97th Congress began, Phase I remained essentially in effect, with incremental pricing applied to a limited number of industrial users and restricted to the price equivalent of high sulfur residual fuel oil.

Congressional interest in incremental pricing, and in natural gas pricing in general, was expected to remain high during the 97th Congress. An administration opportunity to raise the issue was presented in a legislative requirement that FERC issue a new rule by November 1981. If the Administration chose not to deal with gas pricing at that time, however, FERC could use broad language in Title II to find that Phase I be continued indefinitely.

SURFACE MINING POLICY*

Background

The six-year struggle to agree on a measure to deal with the environmental effects of surface mining, particularly of coal, reached a climax with the enactment of the Surface Mining Control and Reclamation Act of 1977 (P.L. 95-87). The controversy did not end there, however. In the 96th Congress, attention focused on the question of State control of the reclamation efforts within their own boundaries.

In the Findings and Purposes section of the Act, the Congress recognized the diversity of mining operations in various parts of the U.S., and indicated its intent to return the regulation of surface mining to the individual States, once they established acceptable regulation and reclamation programs. Section 101 (f) stated:

> [B]ecause of the diversity in terrain, climate, biologic, chemical, and other physical conditions in areas subject to mining operations, the primary governmental responsibility for developing, authorizing, issuing, and enforcing regulations for surface mining and reclamation operations subject to this Act should rest with the States.

In order to ensure a uniform level of reclamation nationwide, however, the legislation specified detailed standards for reclamation, which would have to be met or exceeded by States before they could reestablish their jurisdiction over regulation of surface mining. Further, in mandating the requirements for an acceptable State program, the Act required both "a State law...in accordance with this Act" and "rules and regulations consistent with regulations issued by the Secretary [of the Interior] pursuant to this Act." (Sections 503 (a) (1) and (7)).

When the bill was passed, the States may have expected that the regulations promulgated by Interior would expand on the performance standards specified in the Act, but would leave them flexibility in achieving the standards. The regulations actually developed by the Office of Surface Mining, however, were lengthy, detailed, and specific. In the opinion of the States and the mining industry, they were "cookbook" rules that left little room for adapting to differing regional situations. In addition, OSM interpreted the undefined phrases "consistent with" and "in accordance with" to mean "as stringent as". As a result, States would apparently be required to clone all of the regulations promulgated by OSM in order to gain approval for their own plan.

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Legislative Proposals

In response to complaints from mining States about the OSM regulations, several attempts were made in the 96th Congress to bolster the State role. The first vehicle was S. 1403, which began as an Administration request for legislation to extend some of the deadlines set in the original act. In August 1979, the Senate Energy Committee reported out a substitute bill which, among other things, would have eliminated Section 503 (a) (7) requiring State plans to be "consistent with" the OSM regulations. This would leave only the requirement that the plans be "in accordance with" the Reclamation law itself.

After spirited debate on whether the amendment would return surface mining to the days in which States were in control and, according to some views, under the influence of the mining industry, the Senate passed the bill on September 11, 1979 by a vote of 68-26. But the bill was bottled up in the House Interior Committee, with Chairman Morris Udall opposed to the weakening OSM's regulatory role.

The Senate tried again on August 22, 1980, attaching the provisions of S. 1403 to a House-passed Tonnage Measurement Simplification Act (H.R. 1197). The House members of the subsequent conference committee refused to accept the Senate amendment, however, and the provisions of H.R. 1197, minus the surface mining amendments, were attached to another bill and passed.

Pending Actions and Issues before the 97th Congress

The controversy over legislation and regulations for surface mining and reclamation was unresolved during the 96th Congress. Opponents of the Carter Administration's action in this area also challenged both the law and the OSM regulations in the courts. Several provisions of the law, particularly Section 522 "Designating Areas Unsuitable for Surface Coal Mining" and other measures perceived by the States as infringing on their Constitutional authority to regulate land use within their borders, were subject to suits. Court attention to the OSM regulations, besides the general allegation that they are significant departures from the intent of the law, was focused on provisions for the restoration of approximate original contour, maintenance of air quality, protection of prime farmlands, mining in alluvial valley floors (in the Western States), administration of civil penalties, replacement of water supplies adversely affected by underground mining, bonding requirements, blasting standards and post-mining land use.

Thus, in addition to monitoring the regulatory changes to be expected from the new Administration, the Congress would be watching the fate of the existing law, if not the regulations, in the courts. Developments in those two arenas would probably determine whether further legislation regarding surface mining was pursued.

CHAPTER IV. NUCLEAR POWER ISSUES

INTRODUCTION*

As in the previous two Congresses, legislative initiatives in the area of nuclear power during the 96th Congress centered on funding for advanced reactor R & D, particularly the breeder reactor; on the export of nuclear power technology and its effect on the proliferation of nuclear weapons; and on nuclear waste management. Strongly influencing the controversy over these long-debated issues, however, was the accident at Three Mile Island in March 1979, which revived what had been a relatively dormant question of the safety of nuclear power and the effectiveness of the Nuclear Regulatory Commission in protecting the public health and safety from nuclear accidents.

The TMI accident stimulated the introduction of numerous bills dealing with the licensing of nuclear power plants, and several provisions relating to licensing and safety were incorporated in the Fiscal 1980 authorization bill for the Nuclear Regulatory Commission. In addition, a reorganization of the NRC proposed by President Carter, following in many aspects the recommendation of the Commission he appointed to investigate the TMI accident, was approved by the Congress.

Despite increased concern about safety and doubts about the future of nuclear power, the TMI accident did not change the congressional position on the major Federal activity in the nuclear R&D area: the construction of the Clinch River Reactor (CRBR) demonstration project. President Carter had tried to cancel the project in 1977 and 1978, but the 95th Congress insisted on continued funding for it in both years. The 96th Congress saw a rerun in both 1979 and 1980: Administration budget requests with no funds for CRBR, amended by the Congress to include enough money to keep the project alive. The Administration declined, however, to pursue the licensing of the plant by the NRC.

In the area of nuclear proliferation, the 96th Congress was concerned primarily with overseeing the application of the major legislation passed in the previous Congress. An important issue, however, was the question of exporting enriched reactor fuel for India's Tarapur power plant. The export was finally agreed to, but only after heated debate over India's plans for developing a nuclear weapons arsenal.

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The 96th Congress continued funding the construction of additional uranium enrichment capacity at Portsmouth, Ohio. Despite President Carter's opposition to the reprocessing of commercial nuclear fuel and recycle of plutonium in power reactors, it also funded continued work at the all-but-completed Barnwell Nuclear Fuel Reprocessing Plant in South Carolina.

A major effort to agree on comprehensive legislation dealing with nuclear waste management failed, and the Congress produced a bill dealing only with the question of disposing of low-level radioactive waste.

RESEARCH AND DEVELOPMENT PROGRAMS*

Background

Funding for energy research and development, including nuclear energy, during the 95th Congress was complicated by conflicts between the President and the Congress over the Clinch River Breeder Reactor Project (CRBRP) and some proposed water development projects. President Carter had called for the cancellation of CRBRP in April 1977 because of his concerns over the proliferation potential of the plutonium bred in this type of reactor. Congress disagreed and continued to provide the project with enough funding to keep it alive, but stagnant. These conflicts prevented the enactment of the FY79 authorization bill for civilian energy research in the Department of Energy. The FY79 appropriation for the Department of Energy was passed in the form of a continuing resolution (H.J.R. 1139, P.L. 95-482) after a presidential veto of the original appropriations bill (H.R. 12928). It provided a total of $1,142.3 million for nuclear fission research and development, including $655.9 million for breeder reactors.

Controversy over the Clinch River breeder continued to prevent the passage of a DOE authorization in the 96th Congress. The DOE appropriations for FY80 and FY81 for nuclear fission research and development and a summary of the action on DOE appropriation bills are given in the two following tables.

For both FY80 and FY81, the Carter Administration requested no funding for CRBR, while continuing support of the basic research and development program for breeder reactors. In FY80, R&D funding was requested not only for liquid metal fast breeder reactors (LMFBRs, the CRBR design), but also for a light water breeder and a gas cooled breeder. For FY81, the Carter Administration decided to terminate the gas cooled breeder development program, and although funding for the light water breeder program was provided in FY81, it was expected that once the four-year experiment has been completed, this program would also be terminated. Congress generally supported the Carter Administration's requests for the light water and gas cooled breeder programs.

For LMFBRs and the Clinch River project, the appropriations bills contained funding recommendations only for the basic R&D program, not for CRBR. The latter issue was deferred for consideration until the authorization committees made their recommendations, but since the authorization bills did not pass, the Congress provided funding for CRBR in the continuing and supplemental appropriation bills "at its current rate of operations." For FY80 and FY81, this totalled $172 million per year. In addition, the FY80 Supplemental Appropriation and Recission Act rescinded $5 million of the money appropriated for LMFBR research in FY80 (and $5.35 million for gas cooled breeders), as well as deferring the expenditure of $48 million of the FY80 LMFBR funding to FY81.

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In the request for conventional reactors for both FY80 and FY81, the Administration did not include any funds for high temperature gas reactors (HTGRs). However, Congress provided $25 million for HTGRs in FY80 and $40 million in FY81. The FY81 appropriation for conventional reactors also included $27.5 million for light water reactor safety research and activities related to understanding what occurred inside the core of the reactor at Three Mile Island.

The FY81 funding for advanced isotope separation provided support for R&D on four competing processes, including a process that had been developed by Jersey Nuclear-Avco Isotopes, Inc. (JNAI), a private firm. The House report instructed DOE to chose two of the four processes for support during FY81, but the Conference report went along with Senate language instructing DOE to support all four processes and to provide JNAI with adequate funds to assure that its process would compete on an equal footing with the other processes during the evaluation and selection process.

In the absence of an authorization bill for all DOE R&D, Congress passed a separate bill to authorize research and development in light water reactor safety. The original bill passed by the House (H.R. 7190, H. Rept. 96-1242) would have authorized $28.5 million to DOE for various reactor safety R&D projects, and instructed DOE to evaluate and compare the health and safety risks associated with the use of all potentially significant electrical energy sources. The Senate passed a version of the bill (S. 2884, S. Rept. 96-941) without a specific funding level or provisions for the comparative risk study. In the last days of the 96th Congress, both houses agreed to a compromise version as a substitute to H.R. 7190, without the risk study or funding levels, but including language establishing a program for improving the safety of nuclear powerplants.

Additional information on R&D programs in enrichment and reprocessing and in waste management is given later in this chapter.

Legislative Proposals

The 96th Congress failed to pass authorization bills for DOE civilian programs for either FY80 or FY 81, primarily because of the controversy over the Clinch River

Table 1

Energy Supply, Research and Development--Nuclear Fission

(appropriation in million of dollars)

	FY 80* Approp.	FY 81** Approp.
Spent Fuel Storage	18.5	22.5
Commercial Nuclear Waste	225.1	198.3
Conventional Reactors	60.8	105.5
Advanced Nuclear Systems	39.6	42.0
Uranium Resource Assessment	61.5	30.8
Advanced Isotope Separation	54.7	80.2
Breeder Reactors	690.55	554.4
TOTAL NUCLEAR FISSION R & D	1,150.75	1,033.4

* Total from 1980 Energy and Water Development Appropriation (P.L. 96-69), 1980 Continuing Appropriation (P.L. 96-86), and 1980 Supplemental Appropriation and Recission (P.L. 96-304).

** From 1981 Energy and Water Development Appropriation (P.L. 96-367), FY 81 Continuing Appropriations (P.L. 96-369), FY 81 Further Continuing Appropriations (P.L. 96- 538). [The FY81 Supplemental (P.L. 97-72) added another $50 million for the Clinch River project.]

Table 2

Summary of Action on Energy R & D Appropriations of the 96th Congress

Public Law	House Report	Senate Report	Conf. Report
P.L. 96-69 FY 80 Energy and Water Development Appropriation (H.R. 4388)	H. Rept. 96-243	S. Rept. 96-242	H. Rept. 96-388
P.L. 96-86 FY 80 Continuing Appropriation (H.J.Res. 412)	H. Rept. 96-500	No written report	H. Rept. 96-513
P.L. 96-304 FY 80 Supplemental Appropriation and Recision (H.R. 7590)	H. Rept. 96-1086	S. Rept. 96-829	H. Rept. 96-1149
P.L. 96-369 FY 81 Continuing Appropriation (H.J.Res. 610)	H. Rept. 96-1327	No written report	H. Rept. 96-1443
P.L. 96-538 FY 81 Further Continuing Appropriation (H.J.Res. 637)	H. Rept. 96-1484	No written report	H. Rept. 96-1536

Breeder Reactor project. Funding for these programs, therefore, reverted back to the appropriations bills discussed above.

The FY80 authorization bill for DOE civilian programs, H.R. 3000, was reported from the House Science and Technology Committee on May 15, 1979, with an addition of $183.4 million for the Clinch River project and a decrease (from $55 million to $15 million) for the Administration-sponsored alternative design studies (H. Rept. 96-196, part 3). During House consideration of the bill, two amendments were defeated which would have deleted the funding for Clinch River, and the House passed the bill on October 24 with the Clinch River funding intact. The Senate Energy and Natural Resources Committee, on the other hand, voted to revoke the authorization legislation for the project in the companion authorization bill (S. 688), and added $52 million for Clinch River cancellation costs. The committee reported the bill on June 26, 1979 (S. Rept. 96-232), but the bill was never brought to the floor for consideration.

The FY81 authorization bill for DOE civilian program (H.R. 6627) was reported from the House Science and Technology Committee on May 16, 1980 (H. Rept. 96-967, part 3), and once again provided funding for Clinch River ($155 million). 1/ The bill was never brought to the floor for consideration.

The Senate Energy and Natural Resources Committee took a novel approach in its report of the Senate version of the authorization bill (S. 2332). Rather than recommending funding figures for specific programs, the committee recommended a total of $2.253 billion for all civilian R&D programs in DOE, with further breakdown to be determined later by the appropriations committees, in House-Senate conference, or by DOE itself. The committee reported the bill on May 8, 1980 (S. Rept. 96-687), and the Senate passed it on July 31. Since the House did not act on its version of the bill, however, no DOE authorization bill was enacted for FY81.

Issues Pending for the 97th Congress

The major nuclear fission research and development issues for the 97th Congress are likely to be radioactive waste management (discussed later) and breeder reactor development.

1/ H.R. 7449 pulls out Title I of H.R. 6627, dealing specifically with DOE research and development programs. It contained similar funding recommendations to those in the original bill, and was reported from the House Science and Technology Committee on June 22, 1980 (H. Rept. 96-1179), but was never brought to the floor.

For breeder reactors, the major question facing the 97th Congress continued to be whether or not to fund construction of a demonstration breeder. The controversy will take on a new form, though, because the Department of Energy was completing its conceptual design study (CDS) of a new breeder demonstration project which was approximately three times larger than Clinch River and incorporated new technology. Thus the Congress would not only have to decide whether to proceed with breeder development; if that decision was affirmative, then it would have to choose whether to fund Clinch River, the larger design, or both.

Continued development of high temperature gas reactors (HTGRs) also was a potential issue in the 97th Congress. These reactors have potential safety advantages over light water reactors and may have applications in addition to electricity production, such as providing process heat for producing synthetic fuels from coal or other industrial applications. The Carter Administration tried unsuccessfully to eliminate HTGR R&D in FY80 and FY81 because of the high cost of developing a new reactor design. The 97th Congress may have to decide whether to discontinue DOE's HTGR program or to proceed to build a demonstration reactor.

ENRICHMENT AND REPROCESSING*

Background

Uranium enrichment is an essential step before the uranium can be used to fuel the nuclear reactors in use in the U.S. Reprocessing is a step that many believe is needed after the fuel is removed from the reactor.

The Federal Government has traditionally supplied uranium enrichment services to domestic and foreign commercial users on a full cost recovery basis. The enrichment is done in three large Government-owned plants that were built to meet U.S. defense needs in the late 1940s and early 1950s.

In 1974, because it appeared that the capacity of U.S. enrichment plants was all committed, the Atomic Energy Commission stopped taking orders from foreign customers. The cutoff led several countries to hasten development of their own enrichment plants. Since enrichment plants can be used to produce materials for nuclear weapons, the 95th Congress decided that increased U.S. enrichment capacity was necessary in order to pursue the goal of nuclear nonproliferation. The Nuclear Non-Proliferation Act of 1978, P.L. 95-246, declared that the U.S. would be a reliable supplier of nuclear fuel to those nations adhering to nonproliferation policies, and directed the Department of Energy to expand uranium enrichment activity. The 95th Congress authorized funds to build a Gas Centrifuge Enrichment Plant (GCEP) of 8.8 million units capacity to begin operation in 1986. The construction schedule for this plant was an issue during the 96th Congress.

In the years that nuclear power was being developed, it was assumed that spent fuel from nuclear reactors would eventually be sent to reprocessing plants where the remaining uranium and plutonium in the fuel could be recovered and recycled to fuel other reactors. A large commercial reprocessing plant was under construction in Barnwell, South Carolina, in April 1977, when President Carter, because of concern over the threat of nuclear weapon proliferation in connection with the recycling of plutonium, declared a halt to reprocessing activities in the United States. Shortly thereafter, the Nuclear Regulatory Commission suspended licensing activities for the Barnwell plant.

The fate of the Barnwell plant and the continuation of reprocessing R&D in the Department of Energy were issues facing the 96th Congress.

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* By Robert Civiak, Science Policy Research Division.

Legislation Completed

The only legislation completed during the 96th Congress affecting enrichment or reprocessing were the FY80 and FY81 Department of Energy appropriation acts, P.L. 96-69 and P.L. 96-367 respectively, and a 1980 supplemental appropriation act, P.L. 96-304.

Decreasing projections for nuclear power generation and increasing competition from foreign enrichment plants combined to change the mid-term world outlook for uranium enrichment capacity from one of shortage of capacity to over-supply. In response to these changes, the FY80 DOE appropriation provided funds to keep only 2.2 million of the original 8.8 million units of enrichment capacity for GCEP on schedule for completion in 1988. The schedule for the first 2.2 million units of capacity at GCEP was further pushed back to 1989 in a supplemental appropriation for FY80. The FY81 DOE appropriation maintained the 1989 schedule for the opening of GCEP, but provided funding to operate the gaseous diffusion plants at only 40 percent of full capacity in FY81 in order to save on the substantial power costs of operating these plants and to use some of the large stockpile of enriched uranium that DOE had built up.

For both FY80 and FY81 Congress provided DOE substantially more funds for reprocessing R&D than the Administration requested. For FY80, the Administration requested $30 million and Congress provided $50 million. For FY81, the request was reduced to $12 million, but Congress provided $42 million for reprocessing. For each year, Congress specifically appropriated $11.5 million to DOE to support work conducted at the Barnwell facility.

The funding for Barnwell was intended to keep the technical staff that has been assembled there together while the ultimate fate of the plant was determined. Proposals for the future use of Barnwell involve a Federal takeover of the plant and its use as a research and development facility for breeder reactor fuel reprocessing, and international reprocessing center, or as a temporary spent fuel storage facility. However, no decision regarding its fate was made during the 96th Congress.

Legislative Proposals

During the 96th Congress legislation was introduced into the House (H.R. 6992) and Senate (S. 3009) to establish a revolving fund for uranium enrichment to separate it from the annual budget cycle. The fund would be maintained by the proceeds from the sale of enrichment services. Proponents claimed that the fund would help DOE improve long range planning for enrichment and establish a more flexible policy for uranium enrichment contracts, which would help DOE compete against foreign enrichment concerns. No action was taken on these proposals.

There was some interest in the 96th Congress in instructing the Nuclear Regulatory Commission to resume preliminary proceedings called the GESMO proceedings that were halted in 1977. Completion of GESMO might be necessary before a reprocessing facility could be licensed. This move was partly in response to the completion of "INFCE", an international conference that was convened by President Carter in 1977 (when he halted U.S. reprocessing) to study proliferation related aspects of nuclear fuel cycle activities. INFCE's findings have been interpreted by some as favorable to reprocessing. A version of the FY81 NRC authorization bill reported by the House Interstate and Foreign Commerce Committee instructed the NRC to resume GESMO proceedings. However, action was not completed on this bill during the 96th Congress.

Issues Pending for the 97th Congress

The major issue concerning enrichment is still the schedule for completion of GCEP. Involved in this issue are decisions regarding the operation of the existing diffusion plants, which are more costly to operate than centrifuge plants are expected to be. In addition, it appears that one of several advanced isotope separation techniques, which might be superior to diffusion or centrifuge techniques, might be available before 1990. Funding decisions regarding development of these techniques will likely be made during the 97th Congress. Proposals for an enrichment revolving fund may also be resubmitted.

Regarding reprocessing, the fate of the Barnwell plant, funding for reprocessing R&D, and the possible restart of the GESMO proceedings are expected to be continuing issues of interest.

NUCLEAR LICENSING AND SAFETY*

Background

The accident at Three Mile Island in March 1979 stimulated a flood of legislative proposals to restrict the licensing and ensure the safety of nuclear power plants. A number of changes were eventually enacted into law, but no major changes in the statutory provisions for licensing of reactors were made during the 96th Congress. To a large extent this was because the Nuclear Regulatory Commission used its existing regulatory authority vigorously and in a manner seem by most to forestall need for legislative initiatives.

For example, NRC quickly suspended its licensing activities after the accident in order to deal with the safety questions; its action effecting a moratorium on construction permits and operating licenses--a major theme of many of the proposed bills. Not until August 1980 did NRC issue its first post-TMI operating license, and by the end of 1980 it had granted no construction permits since the accident.

There were no legislative proposals to shut down operating reactors, not even the eight others designed by TMI's Babcock and Wilcox. Several weeks after the accident the NRC staff recommended a temporary shutdown to effect a number of safety-related changes in hardware and procedures, but the affected utilities managed to make the required changes during scheduled shutdowns and thus avoided a forced outage. The only B&W plant that was kept out of operation for a lengthy period besides the damaged TMI Unit 2 was TMI-1; by the end of 1980, NRC had still not allowed TMI operator Metropolitan Edison to restart that plant, which had been shut down but undamaged at the time of the accident. Nevertheless, because of various shutdowns of varying length, some of them not directly related to TMI accident, generation of electricity by nuclear power fell from 276 billion kilowatt-hours in 1978 to 255 billion in 1979 and 251 billion in 1980.

Legislation Completed

The major nuclear licensing legislation in the 96th Congress was incorporated in the Fiscal 1980 authorization bill for the NRC, and the major feature of that legislation dealt with emergency plans for operating reactors. Debate over this issue delayed passage of the Fiscal 1980 bill until the second session of the 96th Congress.

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*By Carl E. Behrens, Environment and Natural Resources Policy Division, and Robert Civiak, Science Policy Research Division.

NRC Fiscal 1980 Authorization (P.L. 96-295): Emergency Plans. The strongest pressure for action on emergency plans came from the Senate. On May 10, 1979, the Committee on Environment and Public Works added an amendment to the Fiscal 1980 authorization bill (S. 562) requiring that operating licenses for existing nuclear power plants and for plants nearing completion be contingent on an NRC-approved State emergency plan. The requirement would take effect immediately for new plants; existing plants would be ordered to cease operations 6 months after the date of enactment of the bill in States that did not have an approved plan by that time.

The Committee bill also required the Commission to promulgate minimum requirements for State emergency plans within 6 months of the date of enactment, using the existing NRC guidelines but taking into account in its regulations the possibility of a "class 9 accident" in which significant amounts of radioactive contaminants were released to the environment. 1/

The 6-month limit for existing plants to gain NRC acceptance of a State emergency plan or shut down was criticized in the Committee report by Senators Alan Simpson, Howard Baker and Pete Domenici. They argued that such an "inflexible requirement" would force NRC to adopt the existing guidelines as minimum requirements for emergency plans, and thus delay needed improvements in the plans. They proposed instead a requirement that NRC develop new emergency plan requirements in light of the inadequacies revealed in the TMI accident, within a specified time period. Once such requirements were developed, a requirement for mandatory compliance for existing plants could be imposed, they said. 2/

When the Senate considered the bill on July 16, a compromise proposal had been worked out between Senator Simpson and Senator Gary Hart, who were ranking minority member and chairman respectively of the Environment Committee's Nuclear Regulation Subcommittee. In the compromise plan shutdown of operating reactors in States where NRC-approved emergency plans were not in place was retained, but the compliance period was extended to 9 months. In considering approval, NRC was to use the existing guidelines for the voluntary emergency plans. However, NRC was

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1/ U.S. Congress. Senate. Committee on Environment and Public Works. Nuclear Regulatory Commission Authorizations: to accompany S. 562. Washington, U.S. Govt. Print. Off., 1979. (96th Congress, 1st session. Senate. Report no. 96-176). p. 3.

2/ Ibid., p. 46.

given 6 months to develop minimum requirements for State plans, and was to require "expeditious compliance" of the plans following adoption. Minimum requirements for the plans were spelled out in the legislation, and included provisions for "initial and periodic testing of plan feasibility in actual drills of State and local jurisidictions." 3/

An amendment proposed by Senators Bennett Johnston and James McClure would have eliminated the forced shutdown of existing plants. Instead, it provided that NRC, in the absence of an approved State emergency plan, would establish an interim plan for individual facilities that did meet its guidelines. The amendment was defeated, however, by a vote of 37 to 40. The Simpson/Hart version, amended to set the deadline for compliance or shutdown at June 30, 1980, then was passed by a 64 to 19 margin.

In the House, the Interior Committee on May 15, 1979 reported out a Fiscal 1980 authorization bill (H.R. 2608) that prohibited NRC from issuing operating licenses in States without approved emergency evacuation plans, but did not mention any emergency plan requirements for plants that were already operating. Even that requirement was eliminated from the version of the bill reported out by the Commerce Committee, and on December 4 the House passed a bill with an increased authorization of $1.485 million to help States prepare emergency plans and a requirement for a report to Congress within 6 months of enactment on the adequacy of State plans.

The conference committee on the Fiscal 1980 authorization bill did not reach a compromise until June 4, 1980. It eliminated entirely the shutdown of existing plants, and provided that NRC could issue an operating license to a new plant even in the absence of an approved State emergency plan, "if it determines that a State, local or utility plan provides reasonable assurance that public health and safety is not endangered by operation of the facility." It retained the provision in both House and Senate versions that NRC set standards for State emergency plans. Unlike the Senate bill, the conference compromise did not specify minimum requirements that the NRC standards should include, but the conferees listed a number of factors that NRC should

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3/ Simpson, Alan K. and Gary Hart. Remarks in the Senate. Congressional record (daily ed.) v. 125, July 16, 1979: S9474-S9475.

consider, including "initial and periodic testing of plan feasibility in actual drills not requiring evacuation." 4/ The bill was signed into law June 30.

The result of the year-long debate over emergency plans thus was a decision to leave the question up to NRC. As the conference report noted, requiring the Commission to determine that there was reasonable assurance that public health and safety was not endangered by operation of the facility, even if it lacked an approved State emergency plan, duplicated existing NRC regulations: they required such a determination in general before it could issue an operating license. Similarly, NRC as part of its review of licensing procedures following the TMI accident revised its regulations concerning emergency planning, and issued its final rule on August 19, 1980 (10 CFR Part 50, Appendix E).

NRC Fiscal 1980 Authorization (P.L. 96-295): Other Provisions. Several other licensing proposals were attached to one or another version of the Fiscal 1980 NRC Authorization bill, and some of them survived in the final compromise.

* A 6-month moratorium on issuance of construction permits was included in the Interior Committee's version of H.R. 2608, reported out in May 1979, but the Commerce Committee deleted it from its version in June. By the time the full House considered the bill in November, it was clear that NRC was not going to resume licensing in the near future, so that a statutory moratorium would be largely symbolic. A floor amendment declaring a moratorium, proposed by Representative Ed Markey, was defeated 135-254. The Senate had defeated a similar floor amendment proposed by Senator Edward Kennedy when it passed its version of the authorization bill, S. 562, in July.

* The Interior Committee version of H.R. 2608 increased the maximum civil penalty that NRC could assess for violation of its regulations from $5,000 to $100,000. This provision survived the House/Senate conference and was enacted into law.

* A mandate for new regulations for siting nuclear power plants remote from population centers was included in the Senate-passed version of S. 562, and that provision was kept in the conference bill. As passed, the bill required that any new application for a construction permit

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4/ U.S. Congress. House. Committee of Conference. Authorize appropriations to the Nuclear Regulatory Commission: to accompany S. 562. Washington, U.S. Govt. Print. Off., 1980. (96th Congress, 2nd session. House Report no. 96-1070). p. 26-27.

submitted after October 1, 1979, meet the new criteria developed by NRC. The new siting regulations were required to specify maximum allowable population density and population distribution for zones surrounding the facility. Existing siting regulations measured population concentration in terms of a minimum distance from the nearest boundary of a densely populated political jurisdiction, such as a city or town line. The new siting requirements provided that the demographic criteria would have to be met exclusive of the design of the reactor.

* The Senate bill provided for criminal fines and imprisonment for knowing and willful violation of safety laws and regulations; the conference approved the measure, with some amendment.

* Sabotage of licensed nuclear facilities or fuel, and murder of, assault on, intimidation or interference with NRC personnel on a licensed project were made Federal crimes.

* Improved training of operators was included in both the Senate and the House bills, and the conference kept the Senate version, which required a plan to be submitted to the Congress and specified criteria for training and retraining operator personnel.

* Notification of State governors regarding shipments of nuclear waste was a provision of both House and Senate versions. The conference bill allowed NRC to exempt shipments that do not pose a hazard to public health and safety.

Energy and Water Appropriations Act, Fiscal 1981 (P.L. 96-367). Funding for NRC for Fiscal 1981, in the absence of a separate authorization bill, was authorized and appropriated in the Energy and Water Appropriations bill (H.R. 7590). The $447.5 million appropriations was $18.7 million less than the Administration requests; $13 million was to come from the nuclear regulatory research budget, which also required a redirection of $10 million for breeder reactor safety research and $3.3 million for gas reactor safety. The Congress added $8 million to the request for reactor regulation to speed licensing actions delayed because of the TMI accident. The DOE appropriation, also included in P.L. 96-367, provided $27.5 million for reactor safety research. (See discussion of P.L. 96-567, below).

NRC Reorganization. The President's Commission on the Accident at Three Mile Island (Kemeny Commission) released its report on October 31, 1979. 5/ The report was highly critical of the Nuclear Regulatory Commission, and among other changes recommended that the 5-member Commission be replaced with a single administrator and the agency made part of the Executive branch.

President Carter rejected that proposal, but on March 27, 1980, he transmitted to the Congress a proposal to reorganize the Commission (Reorganization Plan No. 1 of 1980). After criticisms were voiced by most of the Commissioners in a hearing before the Senate Committee on Governmental Affairs on April 18, an amended version was sent to the Congress by the President on May 5. The amended plan was approved according to the procedure set up by the Reorganization Act of 1977 (P.L. 95-17), which provided that a resolution passed by either House disapproving the plan would prevent its taking effect. The Senate Governmental Affairs Committee reported out such a disapproval resolution (S. Res. 397) on May 22, with a recommendation that it not pass; on July 21 a vote on the resolution was indefinitely postponed. In the House, the Government Operations Committee reported out its disapproval resolution (H. Res. 624) unfavorably on May 21, and it failed passage by a voice vote on May 30.

The main feature of the reorganization, and the least controversial, dealt with emergency management. The conclusion of most studies of the TMI accident was that the five Commission members, each with equal authority, were not ideally situated to deal with an emergency at a particular facility, such as at TMI. The plan gave to the Chairman all the emergency functions vested in the Commission, including "declaring, responding, issuing orders, determining specific policies, advising the civil authorities and the public, directing and coordinating actions relative to" an emergency. It also allowed him to delegate his emergency powers to another Commissioner or to a member of the NRC staff. Exercise of the emergency powers was to "conform to the policy guidelines of the Commission", and the other Commissioners were to be kept informed of actions taken as much as possible.

The reorganization also gave more power to the Chairman in nonemergency operations, and this feature was more controversial. When NRC was first formed in the Energy

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5/ President's Commission on the Accident at Three Mile Island. Report: The need for change: the legacy of TMI. Washington, D.C., October 1979.

Reorganization Act of 1974, the Commission's structure was spelled out in a statute that was a compromise between differing concepts in the House and the Senate. The Senate version specified a number of functional divisions within the NRC staff, with the head of each division independently reporting to the five-member Commission. The House version provided that the functional divisions would report to a single Executive Director for Operations, who would be responsible for the day-to-day operation of the agency and who would report to the Commission. In the compromise, the EDO slot was created, but the heads of the functional divisions retained their independence, reporting directly to any or all of the Commissioners. As the Kemeny Commission and other studies found, this independence led to a lack of unified leadership and consistent direction in NRC, a lack which President Carter, in submitting the reorganization plan, called "a continuing safety hazard."

In its first version, the reorganization solved the leadership problem by giving the Chairman a much more powerful role in running the agency. Policy formulation, rule-making and adjudication were to remain with the Commission as a whole; all other functions would be the responsibility of the Chairman. Appointment and removal of the EDO and the directors of the 5 major functional divisions would be initiated by the Chairman, and only 2 of the 5--Nuclear Reactor Regulation and Nuclear Materials Safety and Safeguards--would be subject to approval by the other Commissioners. The EDO and the directors of the 5 functional divisions would report directly to the Chairman. And, in a phraseology that stimulated controversy and criticism, the existing powers and responsibilities of the Commission were said to be in force "solely in the direct performance of functions of the Commission" as defined in the plan. Since one of the powers referred to in this provision was "full access to all information relating to the performance of his duties and responsibilities," some critics of the plan, including Commissioner Victor Gilinsky, feared that it would curtail the Commission's access to information. This applied especially, Gilinsky testified at the April 18 hearing, to information about "operation of the agency that could prove embarrassing to the Chairman." The added power of appointment and dismissal aggravated this concern. "It is not irrelevant," Gilinsky said, "that the top 200 staff officials will be looking to the Chairman for annual bonuses worth many thousands of dollars."

The amended plan sent up in May dealt with the question about information access by deleting the sentence containing the word "solely," by giving the Commission the right to determine whether any matter fell within its defined responsibilities, and by explicitly stating that the Chairman "shall be responsible for insuring that the Commission is fully and currently informed about matters within its functions." It also addressed the general concern that the Chairman would be too powerful by:

* Making the appointment and ~~removal~~ of the EDO and all 5 directors of functional divisions subject to the approval of the Commission;

* Delegating to the EDO from the Chairman the administrative functions of the Commission;

* Expanding the Commission's "open door" policy by allowing "any officer or employee" with a concern about a critical question of health, safety or defense to "communicate directly to the Commission or to any member of the Commission."

The reorganization plan went into effect October 1, 1980, despite the fact that President Carter's nominee for Chairman, Albert Carnesale, had not been confirmed by the Senate. Acting Chairman John Ahearne, whom President Carter named as a temporary replacement when he demoted Joseph Hendrie following the TMI accident, was still in the augmented post as the 96th Congress adjourned.

Nuclear Safety Research, Development and Demonstration Act of 1980 (P.L. 96-567). In the absence of an authorization bill for the Department of Energy, the 96th Congress expressed its intentions regarding the Department's nuclear safety R&D program via a separate piece of legislation. The first version of the bill, H.R. 7190, was introduced by Representative Mike McCormack in April 1980; an amended bill, H.R. 7865, was reported out by the Science and Technology Committee in August and passed by the House August 25. Senator Frank Church introduced a similar bill (S. 2884) in June, and the Energy and Natural Resources Committee reported it out September 26. A final version was agreed to by both Houses in December, and the measure was signed by the President on December 12.

The main feature of the legislation remained essentially unchanged throughout the process of passage. It directed the Secretary of Energy to set up a 5-year program to develop practical improvements in the safety of nuclear powerplants, and set forth a number of minimal goals in the area of generic safety problems and design and operation improvements, as well as in the training of powerplant operators. It ordered DOE to cooperate with NRC to avoid duplication of effort, to employ underutilized federally owned research reactors and facilities, and to study the feasibility of creating a reactor engineering simulator at a national laboratory. The simulator would be used to train reactor operators and study the performance of various types of reactors under abnormal conditions and hypothetical accidents.

Legislative Proposals

A large number of bills were introduced in the wake of the TMI accident providing a variety of remedies for the safety questions it raised. The proposals included a moratorium on construction permits (S. 1178, Kennedy, H.R. 3698, Jeffords) and operating licenses (H.R. 3945, Markey, H.R. 3988, Weiss, S. 926, McGovern), Federal operation of reactors during emergencies (H.R. 3415, Hollenbeck), regulation of utility rates affected by accident costs and Federal payment of those costs (H.R. 3283, Atkinson, H.R. 3699, Ritter), repeal of the limitation of liability for nuclear accidents (Gravel, S. 1082), and amendment of NRC regulations to streamline decision-making during emergencies (S.1084, Ribicoff, by request). None of these bills were reported out of committee.

After a series of extensive hearings before his Interior Committee, Representative Morris Udall on January 31, 1980, introduced an omnibus bill (H.R. 6390) to amend the Atomic Energy Act. A major feature of the bill was a moratorium on licensing of new nuclear power plants (either construction permits or operating licenses) until certain new safety requirements were met, including compliance with the recommendations of the major investigations of the TMI accident. It also established new plant siting criteria, provided for extended emergency planning near powerplants, streamlined some licensing procedures, and raised the maximum liability, for nuclear accidents under the Price-Anderson Act from $560 million to $5 billion. It set up a Nuclear Safety Board to investigate nuclear accidents, and provided a new program for managing nuclear waste. After a number of mark-up sessions, the Interior Committee reported out the bill in September with only the Nuclear Safety Board and the nuclear waste provisions; the latter were incorporated in amended form in a new bill, H.R. 8378, which was passed by the House on December 3. (See Nuclear Waste Management, below.)

After the long debate over passage of the Fiscal 1980 NRC Authorization bill, the Senate passed its version of the Fiscal 1981 bill (S. 2358) with little controversy on July 31, 1980. The House, however, had difficulty with two proposals associated with the bill. One was a measure to require NRC to resume consideration of reprocessing and recycle of plutonium in light water reactors (see above, Enrichment and Reprocessing); the other was the question of providing funds for intervenors in NRC licensing proceedings. The reprocessing measure (called GESMO, for Generic Environmental Statement on the use of recycle plutonium in Mixed Oxide fuel in light water cooled reactors) was presented to the Interior Committee and voted down by a 20-20 tie, but its sponsors were prepared to bring it up again during floor consideration of the bill. Intervenor funding, which President Carter had been trying to start on a pilot basis for several years, was deleted by the Interior Committee by an 18-16 vote, but also remained a potential source of floor controversy. The bill, reported May 15 by the Interior Committee and June 24 by the Commerce Committee, was not taken up by the full House.

Issues Pending for the 97th Congress

The intense concern of the 96th Congress with nuclear safety and licensing had eased somewhat, as the Congress adjourned, in the absence of further accidents on the order of TMI. Nevertheless, there was still concern over the effectiveness of NRC regulation in guarding against accidents; and, despite the resumption of licensing which allowed several new powerplants to begin operation, there was also discontent at the slow pace of the licensing process and the many requirements for new safety measures adopted in light of the accident. A continuing controversy over whether the stagnation of the nuclear power industry resulted more from regulation and safety requirements than from slow growth in electric demand and financial weakness of utilities promised to complicate resolution of the issues facing the next Congress. Among those issues were:

* Safety goals and regulation: Can licensing be speeded up without sacrificing safety? Is further legislation needed?

* NRC reorganization: is the new Chairman-centered system adequate?

* Should the licensing system be amended to provide for a single construction and operating license?

* Is NRC's safety research--its largest budget item--being properly and efficiently carried out?

* Should nuclear plants be operated by a corps of Federal workers rather than by private utility employees?

* Should intervenors be funded?

NUCLEAR WASTE MANAGEMENT*

Background

One of the most controversial aspects of nuclear power is the problem of disposing the highly radioactive wastes produced by the fissioning of uranium atoms in a reactor. Because these wastes remain dangerous for hundreds and thousands of years, they must be isolated from the environment in such a manner that they need not be watched or guarded.

Concern over this problem has led to the suggestion that further licensing of nuclear reactors be suspended until waste disposal is successfully demonstrated, and in California this concept has been enacted into law. Although the question of nuclear safety, revived by the Three Mile Island accident, was the predominant nuclear topic during the 96th Congress, waste management continued to draw both legislative and oversight attention. A strenuous effort to agree on major nuclear waste policy legislation, however, was unsuccessful.

Federal policy on nuclear waste management has not inspired confidence in the ultimate success of efforts to dispose of radioactive wastes. A project in the late 1960's to use an abandoned salt mine in Kansas was dropped because of technical problems. A large project followed to provide temporary, retrievable storage until the best way of disposing of the material was found. This program was interpreted as indicating that no satisfactory disposal method existed. By 1976, Federal policy had returned to permanent disposal in salt deposits. However, in 1977, the Carter Administration returned to the policy of temporary storage, this time of spent nuclear fuel, rather than separated radioactive wastes.

The nuclear weapons program has been producing radioactive waste material since the 1940s. The millions of gallons of high-level wastes produced since that time have been stored in about 200 stainless steel or carbon steel tanks of various capacities. The ultimate disposal of these wastes has also remained an unanswered question.

President Carter's policy of "indefinitely deferring" the reprocessing of spent nuclear fuel changed both the form and the schedule of the Federal waste management program. Instead of concentrating on permanent disposal of reprocessed high-level radioactive waste, the Department of Energy directed its attention to disposal of unreprocessed spent fuel elements. Since this was a new task with different parameters, the schedule for constructing and licensing a permanent repository was inevitably lengthened.

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At the same time, the deferral of reprocessing meant that utilities needed extra facilities for the temporary storage of spent fuel, until a permanent repository could begin accepting it. The Administration, in response, proposed legislation allowing for Government ownership of spent fuel stored in away-fromrreactor (AFR) storage facilities, and this proposal became part of the legislative initiative in the 96th Congress' attempt to deal with the waste management issue. But the major thrust of its efforts was directed to two broader issues: setting of a firm schedule for achieving demonstration of high-level waste disposal, and formalizing the role of State and local authorities in selecting and licensing a waste repository.

The 96th Congress did act legislatively with three waste management issues. After failing to agree on a comprehensive waste bill, it passed only that portion that dealt with low level waste repositories. It also agreed on a demonstration program to deal with the reprocessed high-level waste produced at the pilot commercial reprocessing facility, since shut down, at West Valley, N.Y. And it agreed to limit the Waste Isolation Pilot Project (WIPP) at Carlsbad, N.M., to R&D demonstration for defense radioactive wastes.

Administration Waste Program

The Carter Administration's waste activities touched these efforts only at random. President Carter had declared waste management a high priority activity in 1977, and called on the newly formed Department of Energy to review the program. After the DOE issued its waste management task force report in February 1978, the President appointed an Interagency Review Group (IRG) on Nuclear Waste Management, consisting of representatives of 14 Government departments and agencies. The draft report of this group was issued in October 1978, and, after extensive public comment was reviewed, the final report was issued in March 1979. The major significance of the IRG was that its report represented a consensus of opinion of a broad range of Government agencies, instead of being the output of a single agency as had previous waste management policies. The group found that "present scientific and technological knowledge is adequate to identify potential repository sites for further investigation," and that "no scientific or technical reason is known that would prevent identifying a site that is suitable for a repository." A "suitable" site was defined as one which "would provide a high degree of assurance that radioactive waste can be successfully isolated from the biosphere for periods of thousands of years."

Release of the final IRG report was expected to be quickly followed by a Presidential statement on nuclear waste policy, but issuance of that statement was delayed until the next year. In the meantime, the Environmental Protection Agency issued criteria for radioactive waste disposal, and the Nuclear Regulatory Commission developed licensing procedures for geologic repositories. The Department of Energy continued its massive R&D program in nuclear waste management.

Policy Statement. On February 12, 1980, President Carter sent to the Congress a message describing his proposals for a comprehensive radioactive waste program. The primary objective of the program, he said, was to isolate existing and future radioactive waste resulting from military and civilian activities from the biosphere so that they would pose no significant threat to public health and safety. This effort, he said, "must proceed regardless of future developments within the nuclear industry--its future size, and resolution of specific fuel cycle and reactor design issues."

The President said he was "persuaded that the capability now exists to characterize and evaluate a number of geologic environments for use as repositories built with conventional mining technology."

Components of the President's policy included:

1. Establishment by Executive Order of a State Planning Council to provide a role for State and local governments in developing and implementing the program. Legislation to make the Council permanent was to be submitted during the 96th Congress.

2. Focusing attention on research and development and on locating and characterizing a number of potential repository sites in a variety of geological environments with diverse rock types. When four or five sites were evaluated and found potentially suitable, one or more would be selected for further development as a licensed full-scale repository. The first full-scale repository was to be selected by 1985 and be operational in the mid-1990s.

3. Providing a limited amount of government storage capacity for spent fuel to provide flexibility and an alternative for those utilities which were unable to expand their storage capabilities. This includes passage of the Administration's proposed spent nuclear fuel legislation.

4. Development of national plans to establish regional disposal sites for commercial low-level waste.

5. Extending NRC authority to the licensing of spent fuel storage, and disposal of transuranic waste and non-Defense low-level waste in any new government facilities.

The policy statement designated the Department of Energy for the management and disposal of radioactive wastes. DOE was to prepare a detailed National Plan for Nuclear Waste Management.

Legislation Completed

Congressional dissatisfaction with the shape and pace of the Carter waste program led to determined efforts to agree on a comprehensive waste bill. The efforts came from two main directions: those who believed that the Administration was moving too slowly and deliberately, and by doing so reinforcing what they viewed as an exaggeration of the technical difficulties involved in disposing of radioactive waste; and those who felt that a formal role for State and local authorities in the siting of waste repositories needed to be legislated. In combination the two groups represented a strong force to seek legislation. In the end, however, they were unable to reach consensus on the major features of the bill. The result of their efforts still bore the number, S. 2189, of the comprehensive bill, but as passed it dealt only with low-level waste.

The Low-Level Radioactive Waste Policy Act (P.L. 96-573). Numerous bills were introduced in the 96th Congress to deal with various aspects of the waste management program. The major bills on the Senate side included S. 742, (Percy/Glenn), S. 2189 (Johnston/Jackson), S. 1521 (Randolph/Hart), and S. 1360 (Domenici). On the House side, the major bills were H.R. 6390 and H.R. 8378 (Udall) and H.R. 7418 (McCormack). S. 742 concerned primarily the role of State and local authorities in the Federal decision on where, how, and when to build nuclear repositories. It would have required the Department of Energy, after working with State and local authorities, to submit a plan to the Congress. A concurrent resolution by both Houses of the Congress would have been necessary before DOE could proceed to apply for a Construction Permit for a repository from the Nuclear Regulatory Commission. S. 742 also would have legislated the formation of the State Planning Council on Nuclear Waste Management, created by Executive Order in February 1980.

S. 2189, as introduced, provided for a retrievable system of long-term storage of spent fuel and high-level waste. The first demonstration facility would be required to be in operation by the beginning of 1988. Preparation of the proposal to construct and operate the facility by the Department of Energy would be declared not a major Federal action under the National Environmental Policy Act (NEPA). The facility would not be permitted to consider alternative sites or design criteria.

S. 2189 was reported out by the Committee on Energy and Natural Resources in January 1980. An amendment submitted in May by Senator Jackson added provisions to allow the governor of an affected State to object to a project, prior to its submisison by DOE for a Construction Permit. If the governor did object, site-specific activity would be halted unless, and until, the President determined that the facility was essential to the national interest.

S. 1521, as amended by the Subcommittee on Nuclear Regulation of the Committee on Environment and Public Works, provided for extended licensing jurisdiction by NRC over waste repositories, including a pilot program aimed at extending jurisdiction over waste facilities operated by DOE under its military program. The bill, as reported by the subcommittee in June 1980, set a schedule for various milestones in the process of identifying a site, licensing, construction, and operation of a waste repository, and provided that issuance of construction permits and operating licenses for nuclear power plants be halted if a license for emplacement of waste in a repository was not issued by January 1, 2000. The bill also incorporated provisions similar to those in S. 1360, authorizing DOE to enter into formal agreements with an affected State or Indian tribe, including procedures for negotiating and resolving differences and concerns about legitimate public health and safety questions at all stages of the process.

On July 29, 1980, the Senate passed S. 2189, amended to include features proposed in several other bills. The major provisions of the bill as passed included:

1. Interim storage of spent fuel. The bill provided that on-site storage facilities should be utilized to the maximum extent consistent with public health and safety, economic consideration, continued operation of the powerplant, and the "sensibilities of the population surrounding such powerplant." It also provided that the Department of Energy could contract with utility owners to take title to spent fuel, from domestic reactors but not foreign ones, transport it to federally owned and operated away-from-reactor (AFR) facilities, and dispose of waste products associated with it. The contract would include a one-time fee to be paid at the time of take-over, calculated to cover the cost of transportation, interim storage, and ultimate disposal. The reactor owner would retain rights in the recoverable uranium and plutonium in the spent fuel, if it was reprocessed, and would be liable to an additional assessment at the time of ultimate disposal if that cost was not covered by the original fee.

DOE would be ordered to build or acquire at least one AFR storage facility, which would have to be licensed by NRC. The governor and legislature of any State being considered as a potential site for an AFR storage facility would be notified and kept informed by DOE of progress. If the governor objected to the project, site specific work on it would stop, and the objections would be forwarded to the President. Unless the President determined that the the facility were essential to the national interest, the project would have to be abandoned. The Presidential determination would not be subject to administrative or judicial review.

2. Disposal of civilian high-level waste. The bill would have provided for disposal of spent fuel or reprocessed high-level waste in retrievable form "for further processing or disposal by another method," while continuing research and development on mined geological repositories and other disposal methods. The retrievable disposal facility would be licensed by NRC, except that alternatives to the design criteria developed by DOE for the site could not be considered either by NRC or by the Environmental Protection Agency under NEPA.

3. Low-level waste. The bill would have declared that each State to be responsible for the disposal of low-level waste generated within its borders. It would have authorized and encouraged States to enter into regional agreements to handle low-level waste.

4. State Planning Council. The bill would have established on a permanent basis the State Planning Council on Nuclear Waste, set up by President Carter by Executive Order February 12, 1980.

5. Coordination with State and Indian authorities. The bill would have required the setting up of a formal relationship between an affected State or Indian tribe and DOE in the development of a plan for a repository, either for permanent disposal or retrievable disposal, of spent fuel or high-level waste. In addition to a process of "consultation and concurrence," DOE would be required, before applying to NRC for a construction permit, to prepare a Repository Development Report. If the State or Indian Tribe objected to the report, it would be submitted to the Congress. If the repository was primarily for defense-related wastes, and the President declared that the repository was essential to the national security, a resolution by both Houses of Congress would be required to defeat the project. If the repository was for civilian wastes, a vote by either House could defeat the project.

H.R. 3690 would have set up a State Review Board in any State where a prospective site was located, to participate in the process of site selection and licensing. It also would have established milestones and schedules for the development of the waste program, but would not have linked licensing of nuclear reactors to progress of the waste program.

H.R. 7418, which was reported out by the Science and Technology Committee in July 1980, would have required DOE to identify four regionally distributed sites for demonstration of high-level waste disposal. The sites would be suitable for future full-scale repositories, but in no event would be used for commercial activities without further legislation. The location of the first two sites would be required to be identified by the end of the first quarter of FY81, and the first demonstration repository would be required to begin operation by the end of FY86. All facilities would be constructed and operated as non-licensed research, development, and demonstration facilities, and none of the activities prescribed by the bill regarding high-level wastes would be considered major Federal actions under NEPA. DOE would be required to consult and coordinate its activities with the appropriate State officials under the bill.

A revision of H.R. 3690 was introduced as H.R. 8378 by Mr. Udall on Nov. 21, and on Dec. 3 the House passed the bill as its own version of S. 2189. The House version contained no provisions for AFR storage of spent fuel, but did contain language similar to the Senate bill regarding low-level waste disposal. It provided a different procedure for State participation in the selection of a repository site than that of the Senate version, and left unstated whether the procedure would apply to disposal of wastes from the military program. The Senate agreed only with the provisions on low-level waste, and on Dec. 13, 1980, the bill was passed by both Houses as the Low-Level Radioactive Waste Policy Act (P.L. 96-573).

West Valley Demonstration Project Act (P.L. 96-368). Although no fullscale commercial reprocessing has been licensed, a pilot facility at West Valley, N.Y., was operated from 1966 to 1972 by Nuclear Fuel Services, Inc. before it was shut down for modification and expansion. During that period, 612,000 gallons of liquid high-level waste was produced; this material is currently stored at the site. Nuclear Fuel Services dropped its plans to reopen the West Valley reprocessing facility, and the State of New York was faced with the problem of dealing with the waste.

The Department of Energy indicated that it would contribute to solving the waste problem at West Valley. Legislation to formalize the relationship, S. 2443, was passed by the Senate in June 1980, and by the House in September. The bill, P.L. 96-368, provided for a demonstration program by the Department of Energy to vitrify or solidify the liquid high-level wastes at West Valley and transport the solidified waste to a long-term Federal repository. The West Valley facility was then to be decommissioned under the program. Cost were to be shared by DOE and the State of New York.

DOE Weapons Program Authorization (P.L. 96-164) and Appropriations (P.L. 96-69) WIPP Facility : The Waste Isolation Pilot Project (WIPP) at Carlsbad, N.M., was originally conceived as a repository for weapons program transuranic (TRU) waste: low-level radioactive waste contaminated with plutonium and other transuranic elements. In its February 1978 task force report, however, DOE recommended that WIPP be used to "exercise the licensing system" by expanding it to receive a limited number of commercial spent fuel elements and perhaps some reprocessed high-level waste.

This approach drew criticism from the House Armed Services Committee, and the Fiscal 1980 Department of Energy appropriations bill (P.L. 96-69) prohibited any funds appropriated to be spent on licensing WIPP and prohibited the storage of any non-Defense waste in the facility. The Fiscal 1980 and 1981 authorization bill for DOE national security programs (P.L. 96-164) authorized WIPP project as defense activity for the express purpose of providing a research and development facility to demonstrate the safe disposal of radioactive wastes resulting from defense activities.

Policy Implications and Pending Actions

Major issues remained to be resolved in the area of nuclear waste management after the 96th Congress. The major question on each issue was whether legislation was needed, beyond funding of DOE's waste management program.

1. Schedules and deadlines. The major impetus for this type of legislation came from those who felt that demonstration of waste disposal was moving too slowly.

2. R&D facilities versus full-scale licensed repositories. The debate will center on the advantages and disadvantages of developing an unlicensed R&D facility first or going directly to a full-scale facility.

3. AFR Storage. Legislation may be proposed to resolve the problem of facilities to store spent fuel temporarily until it is either reprocessed or disposed of permanently.

4. State/local participation. The issue is whether and in what way the role of State and local authorities in siting a waste repository should be formalized.

5. Weapons program waste. Inclusion or exclusion of waste from the weapons program in any legislation dealing with commercial waste management is at issue.

NUCLEAR NONPROLIFERATION POLICY*

Background

The 96th Congress's interest in nonproliferation questions was concentrated on monitoring the development and application of U.S. policy by the Carter Administration in light of the newly passed Nuclear Non-Proliferation Act of 1978. In addition, several questions dealing with the export of nuclear materials under the Act had to be resolved through legislative action.

Nuclear Non-Proliferation Act of 1978 (P.L. 95-242). This legislation, signed into law by President Carter on March 10, 1978, is a landmark act, with its warning of the risks of proliferation, statement of policies, directives for new international and bilateral negotations, upgraded conditions for nuclear exports, and penalties for certain actions. The Act promises that the United States will be a reliable supplier of nuclear services, fuels, and equipment to nuclear nonweapons states that agree to the Act's nonproliferation policies. It would withhold U.S. nuclear assistance and exports from states that do not. So as not to unduly limit the President in international matters, the Act gives him some authority to waive various restrictions on exports, subject to congressional review and possible override.

The Act begins with major statements of policy and purpose, followed by six comprehensive titles. The titles provide for: (1) U.S. initiatives to assure adequate nuclear fuel supplies to other countries from U.S. and international sources; (2) U.S. initiatives to strengthen the international safeguards system of the International Atomic Energy Agency; (3) organization, criteria, and procedures for the licensing of U.S. nuclear exports; (4) negotiation and renogotiation of agreements for nuclear cooperation; (5) U.S. and international energy assistance to developing countries; and (6) extensive reporting to Congress. Interwoven through these titles are nonproliferation requirements, coupled with circumscribed authority for the President to waive some of them, subject to consideration and possible override by Congress.

The Act declares it is the policy of the United States to:

> (1) actively pursue through international initiatives mechanisms for [nuclear] fuel supply

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assurances and the establishment of more effective international controls over the transfer and use of nuclear materials and equipment and nuclear technology for peaceful purposes in order to prevent proliferation, including the establishment of common international sanctions;

(2) take such actions as are required to confirm the reliability of the United States in meeting its commitments to supply nuclear reactors and fuel to nations that adhere to effective nonproliferation policies by establishing procedures to facilitate the timely processing of requests for subsequent arrangements and export licenses;

(3) strongly encourage nations that have not ratified the Treaty on the Non-Proliferation of Nuclear Weapons to do so at the earliest possible date; and

(4) cooperate with foreign nations in identifying and adapting suitable technologies for energy production and, in particular, in identifying alternative options to nuclear power to aid such nations in meeting their energy needs, consistent with the economic and materials resources of those nations and environmental protection.

The Act commits the President and the United States to three major simultaneous international negotiations and to three more substantial international cooperative efforts, all intended to keep within acceptable limits any risks of proliferation from increased world use of nuclear power. The negotiations mandated in the Act are to:

(1) develop international approaches to meeting future world nuclear fuel needs, including establishment of an interim international stockpile of slightly enriched uranium, and, ultimately, establishment of an international nuclear fuel authority to supply nuclear fuel to nations that adhere to certain nonproliferation commitments;

(2) renegotiate all existing agreements for nuclear cooperation with other nations and international organizations; and

(3) seek agreement with other nations, or groups of nations, to adhere to certain policies for control of nuclear exports;

As for U.S. cooperative initiatives, the Act requires that the United States do the following:

(1) seek to act with other nations to strengthen the International Atomic Energy Agency and its safeguards;

(2) negotiate with other nations and groups of nations to establish sanctions for violation of NPT principles by nations and to deal with theft or diversion of nuclear materials by any person or groups; and

(3) cooperate with other nations and organizations to assist in developing non-nuclear energy resources, cooperate with developing and industrialized nations in protecting the environment from use of nuclear power, and aid developing countries in meeting their energy needs.

In addition to seeking nonproliferation commitments from other countries, the Act specifies many criteria, to be met before the Nuclear Regulatory Commission can license a nuclear export. Three of these conditions could pose problems: One requires U.S. approval for the retransfer of U.S. nuclear exports or materials derived from their use; one requires U.S. approval for reprocessing of exported nuclear materials or those derived from their use; and one requires non-nuclear weapons states to agree IAEA safeguards to all of their nuclear activities. The last criteria took effect after 18 months. While some authority is given the President to waive some of these criteria, to do so he must make findings and submit them to Congress, which can override his decisions by concurrent resolution.

The Act also gives the Department of State a de facto veto over export licenses by making issuance conditional upon a statement by the Department that it is the judgment of the executive branch that the proposed export will not be inimical to the common defense and security.

Tests of the Nuclear Non-Proliferation Act and Policy

The Non-Proliferation Act soon had several tests. The first came when the NRC declined to license export of enriched uranium to India. In 1978, the case went to the President, who authorized the export and referred his action to Congress, which did not disapprove it. The second came when Euratom was unwilling to agree to renegotiate its agreement for cooperation with the United States, and U.S. exports were temporarily cut off. A compromise was reached when Euratom agreed to discussion of those items not under consideration by the International Nuclear Fuel Cycle Evaluation (INFCE), which, in effect, postponed crittical negotiations until the spring of 1980. The third case came when the Department of Energy in October

1978 authorized Japan to ship spent fuel containing uranium enriched in the United States from its Tepco and Kansai nuclear power plants to England and France, respectively, for storage and ultimate reprocessing. The fourth came in April 1979 when the Administration cut off certain economic aid to Pakistan because that country was thought to be building an enrichment plant to produce highly enriched uranium. A fifth test involved U.S. efforts to get Switzerland to stop exporting certain items to Pakistan and to stop supplying heavy water production equipment to Argentina.

Legislation Proposed

The 96th Congress was involved at considerable length in one other test of the Non-Proliferation Act: a further shipment of fuel to India for its Tarapur Reactor. When NRC voted on May 16, 1980, not to authorize the shipment, the question was put before the President to decide. On June 19, he authorized the shipment and submitted his Executive order to Congress, to lie for 60 days before it would take effect. During this time, Congress could have stopped the exports by a concurrent resolution passed by both Houses.

After extended debate, a concurrent resolution blocking the exports passed the House by a 298-98 vote (H. Con. Res. 367 and 368), but a similar measure, S. Con. Res. 109, was defeated in the Senate 46-48. Despite this outcome, the issue of nuclear exports to India, in light of its explosion of a nuclear device in 1974 and its continuing refusal to agree to international safeguards for all its nuclear activities, remained active for the 97th Congress.

Policy Implications and Pending Issues

New tests of U.S. nonproliferation policy awaited the 97th Congress. In 1981, it was to receive GAO's 3-year report on effects of the Non-Proliferation Act; stalemate on renegotiation of the Euratom agreement for cooperation was likely to cause the President to again extend cooperations under the existing agreement for another year; India already had applied for the next two shipments of enriched uranium for 1981 but seemed unlikely to agree to full-scope safeguards; Pakistan and Iraq were expected to continue their interest in production of weapons-usable materials; and the DOE authorization for Japan to use U.S.-controlled spent fuel in its Tokai Mura reprocessing plant was to expire in March 1981. U.S. participation in IAEA studies of international spent fuel storage and of international plutonium storage, and U.S. representation on the Committee on Assurances of Supply (CAS) were other events that could lead to congressional interest in nonproliferation policy.

FUSION ENERGY RESEARCH AND DEVELOPMENT*

Background

Nuclear fusion is a potential source of energy which poses comparatively fewer environmental problems than current current fission plants and relies on low-cost, readily available, inexhaustible fuels. In a reactor based on fusion power, the fusion reaction would replace the conventional coal/oil fire box or fission reaction as the source of heat used to produce steam for the generation of electricity. However, in contrast to coal, oil, and fission power, the technical feasibility of fusion power remain unproven.

Two basic concepts are being developed to harness fusion energy: magnetic confinement, in which fusion-producing particles are held in a magnetic "bottle" and energized to the point of fusion, and inertial confinement, in which pellets of fusion materials are activated by burst of high-energy laser beams or other radiation.

Although there are some private sector efforts, the primary source of support for the fusion research effort is the Federal Government. The magnetic confinement program, which began in 1951, and the inertial confinement program, which began in 1962, are both managed by the Department of Energy (DOE). DOE is supporting fusion research at its major national laboratories. Fusion-related research is also sponsored at a variety of other Federal laboratories, universities, and private companies.

Program Strategy. Development of fusion energy is a 3-stage process. The first step, scientific feasibility, consists of achieving in a test facility the conditions required to produce as much energy as is needed to maintain the fusion reaction. The Tokamak Fusion Test Reactor (TFTR), designed to achieve this step, is scheduled to begin operation in August 1982. The second step, engineering feasibility, will include the construction and successful operation of a Fusion Engineering Device (FED) for both the magnetic and inertial confinement approaches. The FED will be capable of producing electricity and will produce a net energy gain. The third step, commercial feasibility, is the development of a system which can produce continuous reliable output at a reasonable cost.

Magnetic Confinement. Emphasis in the magnetic confinement fusion program is placed on two concepts, the tokamak and mirror fusion devices, since they are the most advanced and show the greatest promise of proving scientific feasibility. There is, however, a concurrent development of alternate magnetic confinement devices which have features that may make them more attractive for commercial operation.

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Inertial Confinement. Unlike the magnetic confinement fusion program, the primary goal of inertial confinement fusion research and development is weapons technology applications and the secondary objective is the confinement of a means of commercial power generation. The inertial confinement program is not as advanced as the magnetic fusion program in terms of physics parameters which translate into commercial applications, and proof of scientific feasibility is expectd to come at a later date --mid 1980s.

Legislation Completed

The major issues of concern during the 96th Congress in the magnetic confinement R&D program involved the direction and pace of the program.

During the 1970s a major portion of DOE funds for magnetic confinement was spent on the tokamak design. Although other schemes were also funded, the tokamak was emphasized because it was the most advanced and therefore showed the greatest likelihood of demonstrating scientific feasibility, and because it was thought that building large tokamak devices would yield findings applicable to all fusion schemes.

After criticism from some members of the fusion community that there was too great an emphasis on the tokamak approach, DOE requested a panel of outside experts, chaired by John S. Foster of TRW, Inc., to review the fusion program. In its report, the review group recommended that fusion should be pursued on a broad front, that it was too risky at that stage to select any one concept.

The panel suggested that the most promising alternative concepts should be supported at a sufficient level for a sufficient time to test the concepts.

DOE reflected the recommendations of the Foster group in its FY80 budget request. The request for funds for established and theoretical alternate concepts was increased. The strategy was to pursue a balanced program in which several fusion concepts were explored in parallel before a commitment to building an operating reactor of any type was made.

Table 1
U.S. FUSION FUNDING HISTORY
(millions of dollars)

Fiscal Year	Magnetic Fusion	Inertial Confinement	Total
1970	$ 32.6	$ 3.2	$ 35.8
1971	30.9	9.5	40.4
1972	33.2	19.4	52.6
1973	39.7	34.5	74.2
1974	57.5	48.6	104.3
1975	95.3	62.2	157.5
1976	138.9	71.2	210.1
1977	211.2	99.4	310.6
1978	317.9	130.0	447.9
1979	348.9	143.2	492.1
1980	355.4	191.8	547.2
1981	394.3	208.3	602.6

In its deliberations over the FY80 request, the House Science and Technology Committee chose not to follow the recommendation of the Foster committee. It cut funding for alternate fusion concepts and increased funds for main line tokamak development, with the goal of achieving, as rapidly as possible, a machine which would produce energy. The decision was based partly on the Committee's determination that the most critical need in the fusion program was proof of scientific feasibility, and that the highest priority should be placed on the device which would provide this proof at the earliest possible date. Since there was, according to the Committee, a high degree of confidence that a tokamak could provide this proof in the next few years, alternate concepts were no longer needed as a backup for such a demonstration. Further, the goal of proving commercial feasibility was second to that of proving scientific feasibility. Thus, the investigation of alternate fusion concepts which could have advantages for the commercial operation's, the committee said, must take second priority to the pursuit of a tokamak device to prove scientific feasibility. Without a significant increase in the fusion budget to support both goals, increased emphasis on the tokamak would necessarily have to come at the expense of the alternate concepts.

As soon as the Science Committee's recommendations were announced, protests were heard. The budget reductions fell disproportionately heavily on small university programs. Eventually, some of the money was restored to the budget, but too late to be included in the appropriations bill, which had followed the original recommendations and had already been signed into law. After several months of negotiations, money was reprogrammed so that the effect of the reductions on small university programs was less drastic.

Partly as a result of this controversy, the House Science and Technology Committee formed a Fusion Advisory Panel, chaired by Robert Hirsch, manager of exploratory research for Exxon Research and Engineering Co., and former chief of fusion programs at the Energy Research and Development Administration (DOE's predecessor agency).

After several meetings the Panel concluded in July 1979 that "the magnetic confinement program had reached, and in many cases surpassed, the goals publicly set forth in past years. Magnetic fusion research has consistently been on schedule and very close to cost, even during recent inflationary times." The Panel further stated that the "magnetic fusion program is without a doubt ready to proceed much more agressively than presently projected by DOE ... electric power from fusion should be attainable before the turn of the century [and] the total programmatic cost for an accelerated program will be lower than for that present stretched out schedule." The Panel recommended that DOE be requested to prepare an accelerated program plan. 1/

In response to the Panel report, the Science and Technology Committee requested DOE to explore the details of a substantially more aggressive strategy for achieving the goal of commercial fusion electricity and to prepare for the Committee a detailed schedule, including all significant steps and the cost of each, for getting a magnetic fusion electrical demonstration plant on line by 1995, or alternatively, by 2000.

DOE prepared the requested scenarios and compared them with its baseline program, which would lead to a demonstration plant beginning operation in 2010. While the more rapid programs would require larger funding levels in the near term, the total cost through operation of a demonstration plant was projected to be \$12.1 billion, \$11.9 billion, and \$14.3 billion for the 1995, 2000, and 2010 cases respectively.

In February 1980, DOE Director of Energy Research, Dr. Edward Frieman, requested the Energy Research Advisory Board (ERAB) to conduct another review of DOE's magnetic fusion program. The review group that was established was chaired by Soloman J. Buchsbaum, Executive Vice President

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1/ Letter from Robert L. Hirsch, Chairman, Fusion Advisory Panel to Hon. Mike McCormack, Chairman, Subcommittee on Energy and Research and Production. July 20, 1979. Reprinted in Congressional Record daily edition Sept. 13, 1979. p. E45000.

of Bell Laboratories, and included John Foster, who has chaired the 1978 fusion review. In contrast to the conclusion of the "Foster" committee, the "Buchsbaum" group concluded in its August 1980 report, "As a result of this [recent fusion] progress, the U.S. is now ready to embark on the next step toward the goal of achieving economic fusion power: exploration of the engineering feasibility of fusion." To achieve this goal and also maintain the basic work in fusion research, the panel recommended a doubling of the size of the fusion program (in constant dollars) in 5 to 7 years. 2/

Magnetic Fusion Energy Engineering Act of 1980 (P.L 96-386). The Congress responded to the calls for a faster paced fusion program by the Fusion Advisory Panel, the Buchsbaum Committee, and others and approved an act providing for an ambitious program of research and development in magnetic fusion energy. The Magnetic Fusion Energy Enginering Act of 1980 passed the House by a vote of 365-7, was approved by voice vote in the Senate, and was signed into law (P.L. 96-386) October 7, 1980.

The Act declared it to be the policy of the United States to: (1) establish a national goal of demonstrating the engineering feasibility of magnetic fusion by the early 1990s; (2) achieve, no later than the year 1990, operation of a magnetic fusion engineering device based on the best available able magnetic fusion demonstration plant by the turn of the twenty-first century. It directed the Secretary of Energy to ensure the above goals and specifically to: (1) initiate design activities on a fusion engineering device, using the base available confinement concept, to ensure operation of such device no later than 1990; (2) prepare a comprehensive program management plan for the conduct of the research, development, and demonstration activities under the Act; (3) develop a plan for the creation of a national magnetic fusion engineering center to accelerate fusion technology development via the concentration and coordination of major magnetic fusion engineering devices. The Act further provided for the establishment of a technical panel on magnetic fusion, to be part of DOE's Energy Research Advisory Board (ERAB). This panel was to review the conduct of the magnetic fusion energy program and report at least triennially to ERAB, which must in turn report on the panel's findings to the Secretary of Energy.

2/ Energy Research Advisory Board. Fusion Review Panel. (S. J. Buchsbaum, chairman). Report on the Department of Energy Magnetic Fusion Program. [Washington, D.C.] August 1980, 35 p.

In section 2(a) of the Act, Congress found that "acceleration of the current magnetic fusion program will require a doubling within seven years of the present funding level without consideration of inflation and a 25 per centum increase in funding each of fiscal years 1982 and 1983." However, the Act itself did not authorize any specific funding levels.

The action of the Science and Technology Committee in its FY81 budget review, the formation of the fusion advisory panel, and the widespread support for and passage of the Magnetic Fusion Energy Engineering Act of 1980 marked a a change in congressional oversight of fusion research. Prior to 1980, the funding and direction of the fusion program had been determined almost exclusively in the Executive Branch. The Congress had made minor changes in the fusion budget, but it had never attempted to formulate R&D policy regarding fusion. The 96th Congress, however, expressed a desire to participate more actively in determining fusion program strategy.

Inertial Confinement. In the inertial confinement fusion program, the issues of debate centered on the goal of the program. The primary goal of current research efforts was weapons technology applications and the secondary goal commercial power generation. Proponents of this strategy justified this approach on the basis that at that point in the development of the technology, both the military and civilian applications required the development of fundamental fusion physics which would lead to demonstration of scientific feasibility. Critics of the program claimed that the considerations for military and civilian applications were sufficiently distinct so that the program should be divided, in order to prevent the pursuit of military goals from retarding progress toward the development of a commercial power reactor. All funding for inertial confinement fusion programs was included in the defense activities portion of the DOE budget except for the small program at the University of Rochester funded from Basic Energy Science.

Policy Implications and Pending Issues

The vigorous action of the 96th Congress to set goals and deadlines for the magnetic fusion program raised continuing issues for the future. Both the funding level possible under tight budget restrictions and the question of a broad approach versus a concentration on a single technology could expect debate.

In the inertial confinement program, funding was also expected to be at issue. In addition, the separation of civilian and military applications research in the program can be expected to increase in interest as research progressed.

CHAPTER V: SOLAR AND RENEWABLE ENERGY RESEARCH AND DEVELOPMENT

INTRODUCTION

Action by the 96th Congress in the development of renewable energy resources was highlighted by the passage of the Energy Security Act, which provided for a substantial increase in the renewable energy tax credit, and for the establishment of the Solar Energy and Energy Conservation Bank (described in Chapter II). In all, more than 20 solar or solar-related bills were enacted. In addition, a large solar and renewable energy R&D program within the Department of Energy drew considerable attention from the Congress.

This chapter describes the actions of the 96th Congress in the area of solar energy, with special attention to four technologies: alcohol fuels, ocean thermal energy conversion, wind energy conversion and solar power satellites.

SOLAR POWER*

Background

Policy Overview. The current Federal effort to develop and implement renewable energy resources is one component of a national energy policy aimed at reducing the Nation's dependence on foreign oil and bringing about a major transition in this country's sources of energy supply. Advocates of this policy contend that if it is successfully pursued, solar energy could make an important contribution to the reduction of U.S. dependence on imported oil over the next two decades.

The Federal effort in solar energy during the 96th Congress was guided by a de facto policy put together by Congress over the previous 6 to 7 years. It was developed on an ad hoc basis through a patchwork of legislation and annual budget reviews with numerous congressional committees and subcommittees participating in the process. At the close of the 96th Congress, some 50 different solar or solar-related laws had been enacted.

In establishing solar policy Congress endeavored to make the Federal Government a buffer for the economic and technological risks attendant on the development and commercial introduction of unproven technology. Federal buildings, including military housing, were an important proving ground and market for commercially feasible solar technologies. Federal tax credits were granted for residential and commercial applications of many solar technologies. Most Federal homeowner and community development assistance programs were opened up to solar technologies. International markets for U.S. solar products were utilized as a tool in U.S. foreign policy relations. In addition, the Federal Government bore a very large share of the cost of solar research and development and information dissemination. These basic elements of Federal solar policy provided an important boost to the solar industry during its formative years. It is expected that the Federal contribution will become proportionally smaller as the market for solar products grows and prospers through private sector investments.

Legislative Overview. Congress enacted its first solar legislation late in the 93rd Congress. Included among this early legislation were the Energy Reorganization Act of 1974 (P.L. 93-438), the Solar Energy Research, Development and Demonstration Act of 1974 (P.L. 93-473), and the Non-Nuclear Energy Research and Development Act of 1974 (P.L. 93-577). These laws provide the basic authority Federal agencies now have for conducting research, development and demonstration activities in solar energy.

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After the 93rd Congress, congressional attention turned from basic agency authority to economic incentives for selected solar technologies (primarily solar space and water heating systems). The 94th Congress had no success in enacting solar incentive legislation but did succeed in raising the solar R&D budget ten-fold over the level attained in the 93d Congress.

The bulk of the legislation which now comprises Federal solar energy policy was enacted in the 95th and 96th Congresses, with more than 20 solar-related enactments in each term. Perhaps the most important of these laws have been associated with the National Energy Plans I and II, which were submitted to the 95th and 96th Congresses, respectively, by the Carter Administration. 1/ NEP I initiated action that ultimately led to the 5 public laws comprising the National Energy Act. This legislation produced a number of important solar energy initiatives including the first solar tax incentive to be offered by the Federal Government. More important perhaps than the individual initiatives, the inclusion of solar energy in the National Energy Act accorded this relatively untested technology a degree of credibility and national recognition which previously only the "conventional" energy sources of coal, oil, gas, and nuclear could claim.

The 95th Congress proved eminently sympathetic to solar energy interests. Every solar measure put to a vote in the 95th Congress was successful; the only measures to fail were ones that died because of committee inaction. As in other legislative areas, however, the bills which failed far out numbered the successes. The reintroduction of this legislation, plus the introduction of legislation to strengthen the solar provisions of bills that were successful, provided the framework for the solar agenda of the 96th Congress.

96th Congress Legislation Completed

Major Enactments. As in the 95th Congress, the focus for the major solar intiatives of the 96th Congress proved to be the Administration's bienneal National Energy Plan

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1/ P.L. 95-93, the Department of Energy Organization Act, requires the Administration to submit national energy plans to Congress every 2 years. These plans outline national energy policies and strategies for resolving near- and long-term energy problems facing the country.

(NEP II). NEP II was received by the 96th Congress on May 7, 1979, along with several major legislative proposals for its implementation. After undergoing major revisions during the congressional review process, two of these proposals yielded what might be considered the most important solar legislation of the 96th Congress, particularly in terms of impact on solar consumers and the solar market. The Crude Oil Windfall Profit Tax Act of 1980 (P.L. 96-223), include a provision which substantially increased the tax credit provided in the National Energy Act for residential and commercial applications of various solar energy technologies. The Energy Security Act (P.L. 96-294), established a Solar Energy and Energy Conservation Bank in the Department of Housing and Urban Development to provide federally subsidized loans for solar energy and energy conservation improvements in homes and businesses. The details of this legislation are discussed in Chapter II. Their impact on selected solar technologies will be discussed in greater detail in this chapter.

In other action, wind energy conversion systems (WECS) and ocean thermal energy conversion (OTEC) systems received major emphasis in the 96th Congress as a result of special goal-oriented R&D enactments, with alcohol fuels being accorded similar treatment in the Energy Security Act. The Wind Energy Systems Act of 1980 (P.L. 96-345) authorized an 8-year research, development and demonstration program in wind energy systems which is expected to result in the achievement of installation goals set for both large and small WECS. Similarly, the Ocean Thermal Energy Conversion RD&D Act, (P.L. 96-310) established an accelerated OTEC program designed to meet national OTEC energy production goals. The Energy Security Act set national goals for alcohol fuels production and authorized $1.2 billion for biomass energy projects, much of it to be used for price supports and loan guarantees to back alcohol fuels projects.

Other Enactments. The 96th Congress enacted approximately two dozen solar bills, with most treating solar matters only peripherally. Nevertheless, this body of peripheral, or solar-related, legislation comprises an important part of overall Federal solar energy policy. Three solar-related enactments in the 96th Congress may have particularly significant policy implications for the Federal solar energy program. (1) The Housing and Community Development Act of 1980 (P.L. 96-399), qualified solar energy installations for certain Federal multifamily insurance programs. This act also extended the deadline for DOE to issue Building Energy Performance Standards (BEPS) which many in the solar community thought would be detrimental to solar interest if implemented too early, and it made the use of active or passive solar energy systems mandatory in public housing projects where the use of such systems can be shown to be cost effective. (2) P.L. 96-259, which provides for U.S. participation in international banking institutions, included a provision to encourage international banks to promote the development of renewable energy resources for rural communities worldwide. This provision possibly underscores the importance of solar technology development to U.S. foreign policy interests. (3) The potential value of solar energy installations to the military was recognized in Fiscal 1980 and 1981 Military Construction Authorization Acts (P.L. 96-125 and P.L. 96-418) which successively loosened restrictions on the use of solar energy systems in military housing.

Solar Funding. Federal support of DOE's direct solar RD&D program leveled off during the 96th Congress, while outlays for solar tax credits and support for solar programs in agencies other than DOE increased. The net effect (after inflation) was continued growth in Federal solar spending over levels attained in the 95th Congress in the two fiscal years of the 96th Congress. However, the rate of growth in solar spending in the 96th Congress was modest compared to the pace achieved in previous Congresses.

Without accounting for inflation, the DOE solar budget increased from $549.5 million in FY 80 to $599.0 million in FY 81; funding for solar tax credits and other agency solar funding went from $350 million to $793 million, for estimated outlays totalling $899.5 million in FY 80 and $1,392 million in FY 81. The tax credits and other agency funding are based on Fall 1980 estimates made by the Office of Management and Budget (OMB) and were expected to be revised downward as better data became available. OMB's estimates included residential and commercial solar tax credit outlays, the gasohol excise tax exemption, the biomass investment tax credit and fuel production credit, and loan guarantee costs for biomass fuel production facilities.

Major Studies and Reports

Year 2000 Solar Goal Established. Solar interests received a major boost on June 20, 1979, when, in a special message to Congress, President Carter established a goal of meeting 20 percent of the Nation's energy needs from renewable resources (primarily solar) by the year 2000. 2/ To help meet the goal, the President proposed a number of actions which were basically a potpourri of pending congressional proposals. While generally pleased by the Ad-

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2/ The message was based upon the results of a Domestic Policy Review (DPR) of solar energy which had been prepared in response to a presidential request made during the 95th Congress. (Domestic Policy Review of Solar Energy. A response memorandum to the President of the United States. U.S. Dept. of Energy. TID-22834. Feb. 1979).

ministration's recognition of the potential of solar resources, most solar advocates criticized the message for not setting a higher goal and for not going far enough in providing incentives needed for its achievement. Perhaps most disappointing, however, was the President's failure to seize upon this opportunity to present to Congress a coherent, long-range strategy for solar energy development.

GAO Report on the Solar Goal. About 9 months after the President's solar message, the General Accounting Office issued a report which examined the efforts being taken by the Administration to attain the year 2000 goal. 3/ GAO's primary concern related to its finding that the Administration had no comprehensive plan for attaining the goal. In order to provide greater assurance that the 20-percent goal will be attained, GAO recommended that DOE develop a plan which would include (1) interim goals; (2) specific actions needed to attain the interim goals; and (3) the identification of roles and responsibilities of agencies other than DOE in meeting the goals.

OTA Analysis of DOE's Conservation and Solar Programs.

Some of the major problems impeding the effectiveness of DOE's Conservation and Solar Energy (C&SE) programs were analyzed in a June 1980 study by the Office of Technology Assessment (OTA). 4/ OTA's principal findings were (1) that C&SE lacks a clear vision of where it is going and how it will get there. It was concluded that this deficiency evidently results from the lack of clear direction from DOE management and the lack of a strong analytic capability within C&SE. (2) C&SE's program evaluation capability is deficient, which jeopardizes its ability to keep programs on track and responsive to changing requirements. (3) Perhaps most damaging was OTA's citing of a pervasive belief both within and outside DOE that senior DOE management did not really care about the C&SE programs, and that the quality of management had been inadequate and transient.

Issues Pending for the 97th Congress

Energy Production Goals. At the close of the 96th Congress, the Carter Administration was being strongly

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3/ Twenty Percent Solar Energy Goal--Is There a Plan to Attain it? General Accounting Office. EMD-80-64. March 31, 1980.

4/ Conservation and Solar Energy Programs of the Department of Energy. A Critique. Office of Technology Assessment. OTA-E-120. June 1980.

criticized by solar proponents for what was said to be a lack of commitment to the year 2000 goals. The findings of the OTA and GAO studies were frequently cited to support this argument. Also cited were the leveling off of DOE's solar RD&D budget in the FY 80-FY 81 period, and a reported reduction in the percentage of DOE's energy budget devoted to renewable energy resources in FY 82-FY 86 budget projections. 5/

For the 97th Congress and beyond, solar proponents could be expected to maintain pressure on the Administration to support Federal solar energy programs at a level consistent with the year 2000 goal. Since the goal had no legislative mandate and was closely associated with the Carter Administration, efforts might be expected in the 97th Congress to formalize the year 2000 goal as part of the overall Federal energy strategy. Energy production goals established over the past four years for specific solar technologies (photovoltaics, wind, OTEC and gasohol) were also associated with the Carter Administration. Close committee oversight over this legislation could be expected.

Passive Solar Tax Credits. One item of unfinished business which appeared high on the solar agenda of the 96th Congress could be a candidate for consideration in the 97th Congress. This relates to tax credits for passive solar energy installations.

The 96th Congress almost succeeded in making passive solar energy installations eligible for residential and commercial solar tax credits under the Windfall Profit Tax Act (P.L. 96-223). An amendment to that act to include passive systems passed the Senate overwhelmingly by a vote of 82 to 1, but was dropped from the bill in conference. The Senate-approved amendment was introduced in both the House and Senate as new legislation. Hearings were held on the House bill but the measure did not go any farther. 6/

Political Climate. The change from a Democratic to a Republican Administration, coupled with the loss of certain leading congressional solar proponents in the 1980 elections, raised concern in the solar community for continued growth in the Federal solar energy effort, or even the reversal of gains made over the past four years in reaching a balance between Federal support for long-range,

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5/ Environmental Study Conference Weekly Bulletin Final Report. December 17, 1980.

6/ House Committee on Ways and Means. Hearings on H.R. 7688, H.R. 7690, H.R. 7691 and H.R. 8019. September 8, 1980.

high-risk solar technology options, and support in the form of demonstrations and market subsidies for near-term options. Furthermore, in an expected period of Federal budget austerity, solar advocates were concerned that programs that were not fully implemented at the end of the 96th Congress, such as the solar/conservation bank or the new wind and OTEC initiatives, could be cut back or eliminated by the new Administration.

ALCOHOL FUELS*

Background

Since the dawn of history, farmers have known how to obtain alcohol from agricultural crops. Until this century, alcohol distilled from crops was used only to make beverages. With the advent of the internal combustion engine and its need for fuel at the beginning of the 20th century, the possibility of using farm-derived alcohol as a fuel became of interest in the farming regions of this and other countries.

Before the 1970's, U.S. interest in alcohol fuel peaked three times during this century. The first time was in the period 1906-1910, when denatured alcohol was first exempted from the tax on alcoholic beverages in order to stimulate its use as an industrial commodity. The second period, perhaps the most intense in terms of public and Congressional interest, occurred in the 1930's, when the Great Depression stimulated interest in alcohol fuels as a farm relief measure. The third period of interest in agriculturally-derived alcohol occurred during World War II, when alcohol was used in the production of synthetic rubber, which was essential to the war effort.

In the 1970's, interest in alcohol fuels rose again, spurred by energy shortages and price increases which began with the Arab boycott of 1973-74. The repeated increases in the price of OPEC oil, the continuing possibility of an interruption in the supply of imported oil due to anti-American action or political instability in the oil producing countries, and the "gas lines" of mid-1979 all increased the public awareness of the national interest in reducing American dependence on foreign oil. Alcohol fuel, as a "home-grown" source of energy, emerged as one of the most popular answers to the energy crisis.

This interest was further spurred in January, 1980, when President Carter embargoed grain shipments to the Soviet Union in retaliation for the Soviet invasion of Afghanistan. Administration spokesmen at the time declared that much of the embargoed grain would be converted into alcohol for use as gasohol (the 10 percent blend of alcohol with gasoline). No such direct conversion of embargoed grain to alcohol fuel ever occurred, largely because of a lack of immediately available alcohol production facilities. However, the grain embargo did serve to stimulate public and Congressional interest in alcohol fuel still further, and to give the alcohol fuel program the backing of the Carter Administration.

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* By Migdon Segal, Science Policy Research Division.

The 95th Congress, meeting in 1977-78, was the first in the 1970's to take a serious interest in alcohol fuels. It passed four bills bearing on this topic. The most important of these, the Energy Tax Act, exempted fuels composed of at least 10% alcohol, derived from biomass, from the Federal excise tax of 4 cents per gallon. This provision, which amounts to a 40 cents per gallon tax advantage for alcohol used in gasohol, is considered to have launched the gasohol boom which now sees the blend sold in thousands of service stations around the United States. The other bills passed in the 95th Congress established the National Alcohol Fuels Commission to study all aspects of the alcohol fuels question, provided for USDA-financed pilot plants, and authorized a loan guarantee program (although without funding for it at the time).

Legislation Completed

The 96th Congress enacted four bills with major alcohol fuels implications (other than appropriations bills). Two of these, the Windfall Profit Tax Act and the Energy Security Act, were of particular importance; they are described in more detail in Chapter II.

In summary, the Windfall Profit Tax Act (P.L. 96-223), includes extensive provisions regarding alcohol fuels. Perhaps the most important of these provisions extends the 4 cents per gallon Federal excise tax exemption through the year 1992 (it would otherwise have ended in 1984). The IRS estimates that the tax advantage given to alcohol fuels under the Windfall Profits Act and its predecessor, the Energy Tax Act, was worth $50 million in fiscal year 1980 and will be worth $120 million in FY 1981.

Title II of the Energy Security Act (P.L. 96-294) was designated the "Biomass Energy and Alcohol Fuels Act of 1980". It provides for a comprehensive program of funding for biomass energy programs, with much of the emphasis on alcohol fuels. Under the authority granted by this Act, $525 million was subsequently appropriated for DOE and $525 million for USDA, for spending on alcohol fuels and biomass projects during fiscal year 1981. Most of this funding, for both agencies, will be for the loan guarantee program.

Other major legislation includes: (1) The Gasohol Competition Act (P.L. 96-493), which was intended to prevent the oil companies from unreasonably limiting the sale of gasohol by their franchised dealers; and (2) the budget reconciliation act (P.L. 96-499), which established a tariff on imported alcohol of 10 cents per gallon in 1981, rising to 40 cents per gallon by 1983. The purpose of this tariff is to prevent imported alcohol from obtaining the tax advantages that would otherwise be available under the Windfall Tax legislation.

Legislative Proposals

In addition to the legislation that was enacted into law, over a hundred bills were introduced during the 96th Congress on the subject of alcohol fuels. Almost without exception these were bills intended to encourage the use of alcohol as a fuel. This encouragement was generally provided by tax advantages, by loans guarantees, or by administrative measures such as requiring government vehicles to use gasohol. The alcohol fuels provisions of the two major bills passed, the Windfall Profit Tax Act and the Energy Security Act, incorporate the ideas contained in most of this legislation.

The degree of enthusiasm for alcohol fuels reached during this Congress is perhaps best shown by the Senate's action of November 8, 1979. In the course of floor debate on S. 932 (which eventually became the Energy Security Act), the Senate accepted, on a voice vote and with little debate, the text of S. 1775, an Agriculture Department bill, as an amendment. This legislation, had it become law, would have added an estimated $5 billion in spending on the development of alcohol and other fuels made from agricultural and forest products, to the $1.2 billion approved by the Senate Energy Committee. While the conferees eventually settled on a $1.45-billion funding level, the Senate action accepting the much larger program was indicative of the mood of the 96th Congress on alcohol fuels.

Issues Pending for 97th Congress

The 96th Congress put the nation on the path to an alcohol fuels program of potentially significant scope by enacting most of the legislative proposals for such a program that were before it. It would seemed unlikely that the 97th Congress would wish to pass further major legislation on alcohol fuels. However, the new Congress was expected want to take an active role in overseeing Executive Branch action on implementing the legislation already passed. In particular, the funding for alcohol fuels projects authorized under the Energy Security Act may be threatened by the budget constraints of the new Administration.

OCEAN THERMAL ENERGY CONVERSION*

Legislation Completed

An extensive effort to resolve many of the legal, institutional and financial barriers to the development of ocean thermal energy conversion (OTEC) system resulted in the enactment of several significant laws in the 96th Congress. The Crude Oil Windfall Profits Tax Act (P.L. 96-223) provided a first step in resolving OTEC's financing questions by adding to the 10 percent investment tax credit generally available an additional 15 percent credit for OTEC equipment at two sites yet to be selected. This 15 percent credit is available through 1985. The Ocean Thermal Energy Conversion Research, Development, and Demonstration Act, (P.L. 96-310), enacted July 18, 1980, directs the Department of Energy to accelerate its OTEC program, to develop by 1986 two OTEC demonstration facilities with a combined capacity of 100 megawatts, and to establish a long-term national goal to achieve by 1999 10,000 megawatts from OTEC systems. The Ocean Thermal Energy Conversion Act of 1980, culminated the 1980 OTEC legislative program. This law seeks to enhance OTEC legal certainty by establishing a licensing and permitting program within the National Oceanic and Atmospheric Administration and authorizing use of the Maritime Administration's Loan Guarantee and Capital Construction Fund Programs. In addition, it makes construction and operating differential subsidies available for OTEC support vessels.

Funding. A Federal OTEC development effort began in 1972 as one of the six solar technologies that constituted the original U.S. solar energy program. From a start of $85,000 allocated in FY 72, OTEC appropriations increased to $38.2 million in FY 79 (P.L. 95-482), $40 million in FY 80 (P.L. 96-69), and $39 million in FY 81 (P.L. 96-367). The OTEC R, D & D Act included an authorization of $20 million in FY 81 and $60 million in FY 82. That same law also authorized $5 million in FY 81 and $25 million in FY 82 for conceptual and preliminary design activities for OTEC demonstration plants with a combined capacity of at least 100 megawatts or the energy product equivalent. The OTEC Act of 1980 includes appropriations authorizations of $3 million for FY 81, and $3.5 million for FY 82 and FY 83.

Issues Pending for 97th Congress

The new Congress was expected to monitor the Department of Energy's progress in carrying out the short-term and long-term goals of the OTEC Demonstration Act (P.L. 96-310).

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* By John Justus, Science Policy Research Division.

A crucial factor was the conversion of national OTEC goals into full-scale appropriations, a difficult task in times of Federal budgetary stress.

Careful attention might be given the issue of cost sharing for the OTEC pilot plants. Furthermore, the Federal share of the costs of such plants would probably be subject to multi-year appropriations.

The new licensing regime established by the OTEC Act of 1980 (P.L. 96-320) may require some fine tuning. The content of NOAA regulations implementing the regime was expected to be almost as important as the act itself. Moreover, many issues could arise from the new law-of-the-sea treaty which had been under development by the U.N. Law of the Sea Conference. The role of provisions of the OTEC Act of 1980 extending Maritime Administration financing to OTEC raised a number of important questions. Among them was whether the pilot plants mandated by the OTEC Demonstration Act (P.L. 96-310) would qualify for loan guarantees.

Examples of other possible legislative action included the extending of the energy investment tax credit beyond 1985 and providing producer incentives for OTEC materials, such as titanium used in OTEC heat exchangers.

WIND ENERGY CONVERSION SYSTEMS*

Background

Prior to the 96th Congress, only one bill dealing solely with wind energy was introduced in the Congress. That measure, introduced in 1951, called for the Secretary of the Interior to perform research and development leading to a successful wind-electric machine. The bill was not enacted and interest in wind energy did not revive until the early 1970s when the energy crisis prompted examination of alternative energy sources. Even then, separate legislation was not introduced on wind. Rather, wind energy was covered under the umbrella of omnibus solar energy legislation under consideration in the Congress. Thus wind energy conversion systems are included in the basic solar energy legislative measures of 1974 and in many of the solar economic incentive measures legislative by Congress since then.

Legislation Completed

In the 96th Congress, as part of the drive to provide more support, incentives, and goals for certain promising solar energy technologies, the Wind Energy Systems Act of 1980 (P.L. 96-345) was considered and enacted. At hearings on the measure during the first session, witnesses cited the high potential of wind energy and the benefits which would accrue from accelerated efforts to make wind erosion cost competitive with conventional energy sources. The measure, as acted upon by the 96th Congress, provides for an accelerated program of wind energy research, development, and demonstration to be carried out by DOE. Significantly, prior to this legislation, no quantitative goals or timetable had been set for wind energy's contribution to U.S. energy supply. Through P.L. 96-345, wind energy joined other solar technologies in having such goals and a timetable. The specific goals of the measure are: 1) to reduce the cost of energy from the wind to a level competitive with conventional energy sources by FY 88; 2) to achieve an installed wind energy system capacity of 800 megawatts by FY 88, of which at least 100 MW would be provided by small wind systems; and 3) to accelerate the growth of a commercially viable and competitive industry. Federal assistance called for in this measure to achieve these goals includes contracts and cooperative agreement, grants, loans, and direct Federal procurement.

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* By Barbara Luxenberg, Science Policy Research Division.

Issues Pending for 97th Congress

Even though wind energy conversion systems (WECS) were commercially available at the end of the 96th Congress from a mix of large and small firms, their high installed cost compared to conventional grid power systems kept the industry from being competitive. To compete with grid power and spur industry growth to the point where WECS can impact U.S. energy supplies in the 1990s or sooner, grid-competitive WECS must be introduced on an accelerated schedule which involves technological risks and costs beyond the means of the present WECS industry. A substantial level of Federal RD&D support for WECS would be called for over the next several years in order to meet this schedule. Because of the importance of the Federal role in the rapid growth of the WECS industry, Federal funding of DOE's wind program was expected to be among the most important wind issues in the 97th Congress.

As an adjunct to an accelerated RD&D program, the 97th Congress was expected to consider economic incentives for WECS tailored specifically for this technology. Wind systems were already eligible for Federal subsidies under most of the solar economic incentives legislated by Congress over the past four years. However, this legislation was aimed primarily at solar space and water heating systems and may not always address the specific requirements of WECS. P.L. 96-345 provides basic authority for a variety of WECS incentives; this authority might be translated into specific initiatives by the 97th Congress either through congressional oversight, DOE action, or with new legislation. Another issue which directly relates to market incentives for WECS is the impact of the PURPA regulations on encouraging the use and purchase of wind-generated electricity by utilities, and whether those regulations could be clarified by the 97th Congress.

SATELLITE POWER STATIONS*

Background

Satellite power stations or solar power satellites (SPS) are another concept for using the energy from the sun to generate electricity. In this scheme, arrays of solar cells would be placed in earth orbit (to overcome difficulties in collecting solar energy on the ground because of weather conditions, nighttime, and insolation). The electricity generated by the cells would be converted into microwaves, which would be beamed to the ground and reconverted into electricity. Each SPS could be designed to generate either 5,000 or 10,000 megawatts of electricity.

The SPS idea was introduced in 1968 but received little Federal funding until the late 1970's when the project was transferred from the National Aeronautics and Space Administration (NASA) to DOE. The concept of an SPS has received a mixed reaction in Congress. Advocates in general are supporters of centralized solar technologies and a strong space program, while its primary opponents generally support small scale, decentralized solar options. The opponents are concerned that funding for SPS would detract from funding for near-term solar technologies. The projected cost for research and development through construction of the first 5,000 megawatt SPS is $100 billion.

Legislation Completed

SPS was funded at $4.5 million in FY 78, $6.6 million in FY 79 and $5.5 million in FY 80 to permit DOE, with the assistance of NASA, to conduct a feasibility study of the concept. President Carter requested $5.5 million for SPS in FY 81, but revised that request to zero as part of his attempt to balance the Federal budget. Congress agreed with the revised request and appropriated no funding for SPS in FY 81, while permitting DOE to complete its study and submit its recommendations concerning the future of the program by December 1, 1980. On that date, DOE released a report outlining its findings.

In the 96th Congress, funding for SPS was provided only in the FY 80 Energy and Water Development Appropriation Act (P.L. 96-69), which gave DOE $5.5 million for the project. The FY 80 Supplemental Appropriation and Recission Act (P.L. 96-304) subsequently rescinded $500,000 of that amount.

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* By Marcia S. Smith, Science Policy Research Division.

The House of Representatives passed a bill during the 96th Congress which would have provided $25 million for technology verification studies for SPS. The Solar Power Satellite Research, Development and Evaluation Bill (H.R. 2335) was introduced by Congressman Ronnie Flippo on February 22, 1979. The House Science and Technology Committee held hearings on the bill on March 28-30, 1979 and favorably reported it on May 15 (H. Rept. 96-151). The House passed the bill on November 16, 1979, but no action was taken in the Senate.

Issues Pending for 97th Congress

During the 97th Congress, three studies were to be newly available for use by Congress to assess the SPS concept. The DOE feasibility study was completed in December 1980 and recommendations were expected to be forthcoming from DOE in time for the FY 82 budget process. In addition, the Office of Technology Assessment was completing a study of SPS for release in early 1981. The National Academy of Sciences was expected to release another SPS study in the summer of 1981.

Decisions concerning level of funding for SPS would have to be made for FY 82, especially since no funding was provided in FY 81 and staff would dissipate if no funding appeared to be likely in FY 82. Funding for SPS would still be required for studies of technical, environmental, and economic aspects of the system. The amount of funding the Federal Government is willing to provide for this concept may be limited, and Congress could investigate whether private industry and the utilities would be willing to participate in such a project.

CHAPTER VI: ENERGY CONSERVATION PROGRAMS

CONSERVATION PROGRAM FUNDING

Background

The 96th Congress faced energy conservation budget requests for fiscal 1980 and 1981 significantly higher than previous Congresses because of the expanded Federal role in conservation. President Carter had declared conservation to be the "cornerstone" of his 1977 National Energy Conservation Act (P.L. 95-619), part of the National Energy Act passed by the 95th Congress, created new conservation programs--such as a large 3-year grant program for schools and hospitals purchasing energy conservation equipment--and expanded existing ones--such as the DOE Weatherization Grant Program. The 96th Congress continued the interest, with the creation of the Solar and Energy Conservation Bank as part of the Energy Security Act (See Chapter II).

The budget authorizations for the large conservation-grant programs and for smaller existing research and development programs, formed the core of the conservation budget for FY '80 and '81.

Legislation Completed

Funding for DOE's energy conservation budget during the 96th Congress was contained in Public laws 96-126 and 96-514. A summary of FY '80 and FY '81 appropriations follows, along with FY '79 funding levels for comparison. In many cases, the Congress changed the expenditure authorization levels contained in the legislation creating the program, like P.L. 95-619, when it passed the actual budget authority in the appropriations bills.

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* By Gary J. Pagliano, Environment and Natural Resources Policy Division.

Table 1

ENERGY CONSERVATION APPROPRIATIONS, 96th CONGRESS
($ million, budget authority)

Program	FY '79	FY '80	FY '81
Buildings & community systems	$79.3	$103.4	$113.8
Industrial	40.0	60.2	89.7
Transportation	99.1	113.4	119.7
State/local programs (includes schools and hospitals programs, weatherization assistance, programs to be funded under the pending energy management partnership act, Emergency Energy Conservation Act programs and program direction)	382.1	441.8	452.9
Multi-sector (includes energy impact assistance programs, an energy information campaign and multi-sector programs)	10.2	62.9	86.1
TOTAL	610.7	780.7	862.1

Shifting Support on Conservation. In considering the energy conservation budget, the 96th Congress shifted from a position of overwhelming support during the first session, to a position of qualified support during the second session. In the second session, Congress voted a small, overall in increase in conservation R&D but at the same time voted to reduce substantially energy conservation-grant programs.

In the first session, Congress not only voted to appropriate what DOE had requested for its energy conservation programs (FY '80) but in many cases, also voted to exceed DOE's requests, particularly for R&D programs. Congress increased DOE's R&D requests by 18 percent to $270 million. Among the specific program increases were the following: (1) vehicle propulsion R&D (transportation); (2) cogeneration technology (industrial); and (3) field testing and multiple-unit demonstrations of 40-kw onsite fuel cells (buildings and community systems). This Congressional endorsement along the Carter Administration's "highest" commitment to conservation would lead to large increases in FY '81 budget requests.

For FY '81, DOE recommended a 31 percent budget increase for its conservation programs. Major funding increases came in three areas: (1) grants for State and local conservation (increased $112 million); (2) impact assistance grants to communities affected by major energy development (increased $100 million); and (3) support for a national advertising campaign promoting conservations (increased $43 million).

The table below summarizes how the Congress acted on DOE FY '81 requests.

Table 2

FY '81 Funding of DOE, Energy Conservation Programs
($ million, budget authority)

Program	DOE Requested	House Approved	Senate Approved	Conference Agreement
Buildings & community systems	132.6	119.8	112.7	113.8
Industrial	58.9	90.4	76.7	89.7
Transportation	113.0	107.5	120.0	119.7
State/local programs	518.6	467.7	439.7	452.9
Multi-sector	201.2	65.2	104.1	86.1
Conservation (total)	1,024.3	850.6	853.1	862.1

Overall funding for R&D conservation programs (Buildings and community systems, Industrial, and transportation) was increased, but in the transportation program, the House and Senate acted differently. While the House voted to reduce funding, mainly in the electric vehicle program, the Senate voted an increase, mainly in the vehicle propulsion R&D program.

However major reductions in the DOE requests occurred in the grant programs. The House and Senate were unanimous in "zeroing-out" the Energy Management Partnership Act Program ($126.6 million) because implementing legislation had not been passed, 1/ and "zeroing-out" the energy informa-

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1/ The fate of EMPA legislation is described later in this Chapter.

tion campaign ($50 million) because it was decided the program was not needed. Concern about program management led the House to reduce the energy impact assistance program (by $80 million) and led the Senate to reduced the school and hospital program and the Weatherization program (by a total of $26 million). Final reductions totaled 16 percent of the original DOE request.

Issues Pending for the 97th Congress

The energy conservation budget was due for undergo close scrutiny as the 97th Congress began. Two major issues Congress were: (1) how effective DOE's conservation programs were; and (2) whether or not the alternative "free market" approach, espoused by the incoming Reagan Administration would be more effective as well as cost-efficient.

Regarding program effectiveness, many concerns were raised by the 96th Congress. Three of those concerns were: (1) grant program management and the programs' inability to meet original conservation goals as defined in authorizing legislation; (2) DOE's success, or lack of it, in fostering more conservation in Federal facilities; the country's largest energy user; and (3) existing program coordination with potentially new legislation being considered by the Congress--such as the proposed energy impact assistance legislation.

The 96th Congress was acquainted with potential advantages of the "free market" approach to energy conservation. Evidence appeared in the following reasons cited to eliminate DOE's Energy Information Campaign Program: "Energy consumption is decreasing because of increasing prices and an awareness of energy import instability through regular news occurrences. Private industry is also advertising extensively in conservation areas." 2/

Most likely the 97th Congress will attempt to balance the market approach and program effectiveness, with perhaps two other major considerations. First is whether or not important objectives of U.S. energy policy remain intact--such as reducing oil imports and coping with an oil supply disruption. And second is the equity consideration--making sure that low-to-moderate income energy consumes adversely impacted by potentially higher energy prices in a "free market" approach would not be forgotten.

2/ Department of the Interior and Related Agencies Appropriation Bill, 1981. House Report 96-1147, pg. 82.

AUTOMOBILE FUEL ECONOMY*

Background

One of the less controversial provisions of the Energy Policy and Conservation Act of 1975 (P.L. 94-163) established standards of fuel economy for passenger cars of both foreign and domestic auto producers. While the auto industry complained that they might not be able to meet the standards, particularly in the absense of revised air quality standards, debate over the issue was muted compared to EPCA's provisions for oil price controls and some other measures. EPCA established annual Corporate Average Fuel Economy (CAFE) standards for model years 1978-1980 and 1985, and authorized the Secretary of Transportation to establishing interim standards for model years 1981-1984. The law targeted a fuel efficiency of 27.5 miles-per-gallon (MPG) for model year 1985.

In the years following passage of the EPCA standards, some voices urged that the standards be raised, but there was widespread concern--echoed by the industry itself--that the industry could not meet higher standards with an automobile that Americans would care to purchase. It was an argument broadly accepted. The romance with fuel efficiency and smaller cars, stimulated by the Arab oil embargo of 1973-74, waned considerably when gasoline prices declined in real terms during the latter half of the 1970s.

But the shortages of 1979, brought on by the Iranian crisis, renewed the romance, and imported cars captured a greater share of the marketplace when American manufacturers had an insufficient number of highly-efficient cars to meet the new demand. The shortages not only overwhelmed the earlier arguments that American consumers would not purchase high-MPG cars, but made the schedule of standards in EPCA virtually irrelevant. All the major manufacturers predicted during 1980 that the 1985 fleets would significantly exceed the mandated 27.5 MPG standard.

It is not surprising, then, that the 96th Congress weighed infusing new monies into automotive research and development and establishing new fuel economy standards beyond 1985. At issue in Congressional hearings and committee deliberation was the balance between "regulatory pull," represented by fuel economy standards, and the " technology push" of further research and development.

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* By Robert Bamberger, Environment and Natural Resources Policy Division

Neither approach was enacted, but the continued difficulties of the domestic automotive industry appeared likely to keep the issue alive. The 96th Congress did enact some relatively minor amendments to the EPCA fuel economy provisions in the Automobile Fuel Efficiency Act of 1980.

Legislation Completed

In December 1979 the Administration proposed several amendments to EPCA dealing with small manufacturers, foreign subsidiaries of domestic firms, and the earning of "credits" for exceeding the standards for any one year. With some changes, the amendments were approved by the Congress, and the bill, S. 2475, was signed by President Carter on October 10, 1980 (P.L. 96-425).

Exemption of Low-Volume Manufacturers from Fuel-Economy Standards and Reporting Requirements. The Energy Policy and Conservation Act authorized the Secretary of Transportation to exempt manufacturers of fewer than 10,000 vehicles if he found no technologically or economically feasible means by which these manufacturers could comply with the EPCA standards, providing that an alternative fuel economy standard was established at the maximum feasible average fuel economy level for that manufacturer. The National Highway Traffic Safety Administration (NHTSA) found that it was extremely costly for small manufacturers to substantiate their applications for exemption and for NHTSA to review them. When making its original recommendation that these provisions of EPCA be dropped, NHTSA further noted that small manufacturers are typically less able to predict future fuel econony improvement because their technical expertise was limited. [1]

Aside from the administrative burden to both the manufacturers and NHTSA, the agency felt--and Congress concurred--that the energy savings, even were compliance technologically feasible in all instances, were trivial. The Auto Importers of America, Inc., testified before the Senate Committee on Commerce, Science and Transportation that the 1980 fleet of the seven manufacturers affected probably exceeded CAFE standards daily by 132 barrels. Most witnesses at Senate and House hearings offered little objection to the amendment. Witnesses for Ford and General Motors objected on the basis that it was discriminatory, but the Committee report noted that neither offered "evidence of any measurable injury to their business interests traceable to this exemption." 2/

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[1] U.S. Department of Transportation. National Highway Traffic Safety Administration. Automotive Fuel Economy Program. Third Annual Report to Congress. DOT HS-803 777: p. 128-129.

The final bill exempted the smaller manufacturers from certain reporting requirements in EPCA, and provided that they might elect to consolidate their applications for exemption or alternate standards for 1981-85, instead of substantiating them on an annual basis.

The amendment did not exempt the small manufacturers from a number of other regulations, such as EPA emissions or DOT safety standards. Fuel economy performance of these manufacurers' vehicle fleets would continue to be measured as before and posted on the vehicles.

Averaging of Domestic and Foreign-Manufactured Fleets in Calculation of CAFE. EPCA permitted domestic manufacturers to average the fuel economy of "captive imports" (i.e., cars manufactured abroad by U.S. manufacturers for sale in the United States) with that of domestically produced cars in the calculation of a manufacturer's CAFE for model years 1978 and 1979. Thereafter, the law provided that the fuel economy of domestically manufactured cars and imports would be calculated separately and that both fleets would have to be in complicance with the EPCA standard for any model year. The law defined a domestically manufactured car as one which had at least 75 percent of its content (or value added) produced in the United States and Canada.

The purpose of the provision was to discourage domestic manufacturers from importing large numbers of efficient cars from abroad to average in with less-efficient, domestically-manufactured vehicles. When the provision was enacted, it was not anticipated that some foreign manufacturers might wish to establish facilities in the United States and that the provision might, in fact, discourage potential domestic employment instead of protecting it.

Volkswagen of America completed an assembly plant in Westmoreland, Pennsylvania, in 1978, designed to manufacture

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2/ U.S. Congress. Senate. Committee on Commerce, Science and Transportation. Amendments to Title V of the Motor Vehicle Information and Cost Savings Act, "Improving Automotive Efficiency." 96th Congress, 2d session. S. Rept. 96-642: p. 5. See also: U.S. Congress. House. Automotive Average Fuel Economy Standards. Hearings before the Subcommittee on Energy and Power of the Committee on Interstate and Foreign Commerce. 96th Congress, 2d session. March 28 and April 15, 1980. Serial No. 96-162: p. 177.

Volkswagen Rabbits and light pickup trucks. Volkswagen testified in spring 1980 that the domestic content of Rabbits and trucks manufactured at the Westmoreland plant average 60-61%, still classifying these vehicles as imports for calculation of the CAFE. In hearings before the House Energy and Power Subcommittee, Volkswagen said the statute could discourage the company from boosting the domestic content of U.S.-assembled models.

> ....If U.S.-produced VWs exceed 75 percent U.S. component,...our most fuel efficent cars... would comprise one fleet and would also have the highest sales volume. Our imported cars, which would comprise the other fleet, would have a lower fuel economy average. The availability in the United States of these imported cars would be jeopardized with adverse implications for our dealers who require a full model line to be competitive. 3/

Volkswagen noted that the composite fuel economy of its fleet marketed in the United States was 31.8 miles per gallon--exceeding the mandated standard for 1985--but anticipated that the model year 1984 and 1985 fleets of imported Audis, Porsches and VW vans would be in noncompliance with the standards for those years if calculated separately from U.S.-assembled Volkswagens.

American Motors also testified in support of changing the provision. In January 1979, AMC had announced an agreement with Renault of France to distribute each company's products. The following October AMC agreed to manufacture Renault cars in its Kenosha, Wisconsin facilities. AMC testified that its domestic fleet might not meet the EPCA standards beginning with model year 1982, that it would want to add a substantial number of the American built Renault cars to its fleet to improve its CAFE, but that the definition of "domestic manufacture" would make it impossible to include them in the calculation of domestic fleet fuel economy before 1985 or 1986. AMC testified that it was now quite clear that the 75-percent domestic content requirement had not achieved the intended effect of "protecting and enhancing" employment opportunities:

> In fact, the opposite is true...the 75-percent requirement has had the unintended effect of discouraging the establishment of new manufacturing operations which utilize foreign technology

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3/ Automotive Average Fuel Economy Standards. Hearings, Ibid., p. 190-191.

> in this country and thus discouraging the creation of new jobs for U.S. workers. 4/

The law as passed permitted a manufacturer who began production after passage of EPCA (December 22, 1975) and completed one model year's production by December 31, 1985 to combine its domestic and imported fleets for computing its CAFE. The Secretary of Transportation must grant a manufacturer's petition to combine fleets unless he finds that it would not increase employment in the United States or reduce the import of parts and supplies to be used in automobiles produced by the manufacturer.

The Senate committee report noted that the other domestic manufacturers were opposed to the proposed changes, but that "none of their arguments proved...that U.S. production of such foreign automobiles was in any way more injurious to them than import of such automobiles." Further, it stated that the possible advantages to domestic employment within the automotive support industries from the amendment were apparent.

Credits for Exceeding Standards. Under EPCA, failure to meet standards in any model year subjects a manufacture to a civil penalty of $5 for each automobile in the corporate fleet for each one-tenth of a mile per gallon it falls short. Those penalties could be offset, however, if the fleet exceeded the standards in the model year immediately preceeding or following the year of violation. The manufacturer would still be in violation of the law, but the credits earned would be subtracted from the civil penalties.

The Automobile Fuel Efficiency Act of 1980 extended the "carry forward" and "carry back" privilege to 3 years. It also redefined "unlawful conduct" by providing that noncompliance with the standard would not be a violation of the law if there were sufficient credits to offset it. If a manufacturer expects to be in noncompliance in a given model year and has not accrued offsetting credits in previous model years, he may be granted relief by demonstrating that he will earn sufficient credits during the next three model years. The Secretary of Transportation must approve the plan unless it is unlikely that sufficient credits will be earned to offset the penalty. The redefinition of "unlawful conduct" responded to the automakers' concern that they would not exercise the option afforded by the amended carry forward/back provision if they would still be considered to have broken the law. Witnesses at hearings generally supported both proposals, with the automakers noting that the expanded carry forward/back provision

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4/ Ibid., p. 205-210.

would reduce some of the associated risks of introducing new technologies.

Legislative Proposals

The Automobile Fuel Efficiency Act provided assistance to manufacturers encountering specific situations or anomalies not anticipated by the original EPCA legislation. A much broader focus characterized a second Congressional debate relating to automobiles and energy consumption: what were the prospects for continued improvements in automobile fuel economy beyond model year 1985 (the last year in which a specific corporate average fuel economy is mandated by EPCA), and what was the appropriate Federal role to promote fuel efficiency after 1985?

The Automotive Research Act of 1979 (H.R. 4678) and portions of the Transportation Energy Efficiency Act of 1979 (S. 2015) focussed Congressional debate on the appropriateness of accelerating the Federal role in automotive research and development. Amendments to S. 2015 would have raised the CAFE to 40 mpg for model year 1995 and provided for accelerated depreciation to help the industry make capital investments in an otherwise difficult economic climate. Both approaches to automotive fuel economy--the "technology push" of accelerated research and development and the "regulatory pull" of further industry-wide fuel economy standards--were debated without final resolution.

National Automotive Research Act of 1979 (H.R. 4678). A cooperative program of basic research related to automotive technology has been conducted by the Departments of Defense, Energy, Commerce, Transportation, the National Aeronautics and Space Administration (NASA), and the National Science Foundation (NSF). An estimated $45 million was appropriated for these programs in fiscal 1981. The National Highway and Traffic Safety Administration (NHTSA) also had $42 million in 1981 for R&D in support of the agency's regulation of fuel economy and vehicle safety. Approximately $122 million was appropriated to DOE during fiscal 1980 to support research on alternatives to the internal combustion engine, carried out under contract by NASA.

The National Automotive Research Act of 1979 proposed consolidating these Federal programs within NASA. The bill was referred to both the Science and Technology and the Commerce Committees. It received sharply differing treatment in the two committees.

At Science and Technology, after a hearing by the Subcommittee on Tranportation, Aviation and Space, the bill was reported favorably. The Committee concluded that efforts within the automotive industry to develop fuel efficient technologies beyond 1985 were inadequate, and secondary to meeting near-term standards. On the other hand, the committee believed that the Federal program were currently "narrowly focused," and that an expanded Federal program was needed.

The committee found NASA best suited to conduct an automotive R&D program. It noted the concern of witneses that there was a significant difference between the aeronautics industry (in which NASA had enjoyed success) and the automotive industry, but said that those differences were "not expected to invalidate the mechanisms employed by NASA in achieving commercialization of Government sponsored aeronautical research and technology development." An additional advantage noted was that NASA was not distracted by regulatory obligations. "Near-term imperatives of the regulatory process...compete with, and inevitably divert resources...from the longer horizon research and technology development efforts," the committee report noted.

> Government strategy to achieve future advances in automotive technology should rely mainly on "technology pull." Regulation should be used only in those instances where market forces are insufficient to bring about socially desired goals. This approach will open the process to much wider participation and, in the end will result in the best technology. 5/

The committee further observed that arbitrary performance targets, such as specific fuel economy standards, "are not appropriate to a program directed at technology development and should not be included in law."

> While research goals for specific projects are important, overall statements of this kind imply an activity that intruded into traditional areas of industry responsibility and is beyond the intended scope of the envisioned program. Furthermore the mere expression of such goals tends to cause them to become fixed as standards in legislation or regulation. 6/

5/ U.S. House of Representatives. Committee on Science and Technology. National Automotive Research Act of 1980. Report together with additional views to accompany H.R. 4678. 96th Congress, 2d session. H. Rept. 96-920, Part 1. p. 11.

6/ Ibid., p. 12.

The bill was reported out by the Science and Technology Committee on May 6, 1980 and referred to the Committee on Interstate and Foreign Commerce. That committee sharply questioned the philosophy of the Science and Technology Committee, and reported out an amended bill that was entirely different. The amendment called for a study "of the adequacy of the existing scope, organization, coordination and management of Federal automotive research and development programs," to be completed by mid-1981. The stated purpose of the study would be to assess "the relative effectiveness of increased automotive technology development on the one hand and regulatory requirements on the other..." The Commerce Committee report noted that the study might show "that a lesser Federal research role is called for, rather than an expanded role. It could also result in some increase in this role." 7/

The committee challenged the ease with which research and development could be divorced from regulatory activities as called for by the Science Committee's bill. Pursuant to a number of laws, including the Motor Vehicle Information and Cost Savings Act, the Energy Policy and Conservation Act, and the Clean Air Act, the DOT, EPA, DOE and other agencies carry out research in support of motor vehicle safety and fuel economy standards. Section 4 of the Science and Technology version provided that R&D activities "necessary for the support of the rulemaking responsibility" of Federal agencies would not be transferred to NASA. The Department of Transportation testified that the clause was inadequate to protect research that "provides some support to the Department rulemaking process though it is not specifically directed to particular regulatory requirements..., The Department could be denied the benefit of these types of research activities." 8/

Of more critical importance was an apparent reluctance on the part of NASA to direct automotive research and development. The agency cautioned against the expectation that the challenge of automotive technology was comparable to that of aeronautics, which NASA had so successfully addressed. "The differences between these industries are

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7/ U.S. Congress. House of Representative. Federal Automobile Research and Development Functions. Report together with dissenting views to accompany H.R. 4678. 96th Congress, 2d session., H. Rept. 96-920, Part: p. 5.

8/ U.S. Congress. House. National Automotive Research Act. Joint hearing before the Subcommittees on Energy and Power, Consumer Protection and Finance, Health and the Environment, of the Committee on Interstate and Foreign Commerce. 96th Congress, 2d session. Hearing held May 28, 1980: Serial No. 96-146. p. 8-9, 124.

substantive," the agency commented. "Our experience with [the automotive] industry falls far short of what we would need to know to adjust the aeronautical model to the circumstances of the automotive industry." 9/ Dr. Robert A. Forsch, administrator of NASA, flatly testified against the bill "in its present form," believing a cooperative approach between NASA, DOE and DOT was essential to the development of a national progam. 10/

The Carter Administration's Office of Science and Technology Policy also testified against the legislation, contending that it failed to identify "any technology or system to be developed which are not now supported by the industry or the Administration's program." The bill would authorize $300 million "for a conceptual program with no programmatic definition." 11/

The legislation was not debated by the full House, and the differences between the two committees were left unresolved. A similar debate on the relative merits of "technology push" and "regulatory pull" in addressing auto fuel economy in the long term took place in the Senate, in the context of the proposed Transportation Energy Efficiency Act of 1979 (S. 2015). As in the House, the bill in question did not reach the floor. Among other provisions, S. 2015 provided grants to States and local jurisdictions for implementing "innovative transportation strategies" that promoted more efficient use of automobiles, and authorized $800 million through FY 89 for "cooperative basic automotive research" and $200 million for "automotive fuel economy assessment." The research funds were to come from the proposed Energy Security Trust Fund (see Chapter II, Windfall Profits Tax).

Many of the witnesses who appeared before the House on H.R. 4687 testified on the R&D provisions in S. 2015 and on an Administration initiative creating a Cooperative Automotive Research Program (CARP) to involve industry and government. The program was envisioned to reach spending levels in the mid-1980s of $100 million annually, with the cost shared equally by government and industry.

In deliberations before the Commerce Subcommittee on Science, Technology, and Space, a further dimension to the debate was added by an amendment proposed by Senator Henry Jackson to establish a fuel economy standard of 40 MPG in

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9/ H. Rept. 96-920, Part 2, *op. cit.*, p. 23-24.

10/ Hearings, National Automotive Research Act, *op. cit.*, p. 55.

11/ *Ibid.*, p. 41.

1990. A related amendment would have provided accelerated depreciation on machinery and other capital equipment for the production of more fuel-efficient automobiles.

Senator Jackson argued that the technological feasibility of achieving 40 MPG by 1995 was not at issue, that the technology was cost-effective and would reduce consumption significantly. He expressed concern about capital requirements within the industry to support development of more efficient cars, and urged that Federal support be given.

Joan Claybrook, then Administrator for the National Highway Traffic Safety Administration, testified that the Carter Administration had no official position on the matter, pending scheduled completion of a study of the industry early in 1981. "[S]tudies now underway in DOT and others at DOE can point the way to the kind of integrated strategy we need. The role of fuel economy standards in the future will be determined within this overall framework," she said. 12/

Industry witnesses were not supportive of establishing post-1985 fuel economy standards, and cited familiar arguments. They were confident that demand would support increased fuel efficiency, but expressed the oft-repeated concern that standards "that are too stringent will result in products...unacceptable to a large segment of buyers." 13/ The manufacturers seemed to dismiss the possibility that consumers in the mid-1980s would not want what was good for them, but were wary about establishing specific targets that identified "what was good for them" with what was in the interests of national energy policy. Testimony by the United Auto Workers pointed out that the incremental savings from higher efficiency narrows as base fuel efficiency improves, and that comparable savings might be achieved by other means.

Testimony by Dr. Frank N. Von Hippel, Chairman of the American Federation of Scientists, strongly urged the adoption of fuel economy standards for the 1990s, and at levels higher than proposed in Jackson's amendment. Von Hippel argued that some foreign manufacturers, especially Volkswagen, were already manufacturing automobiles

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12/ U.S. Congress. Senate. Subcommittee on Science, Technology and Space. Committee on Commerce, Science, and Transportation. Automotive Technology and Fuel Economy Standards. Serial No. 96-110, p. 234.

13/ Testimony of David S. Potter, Vice President, General Motors, *op. cit.*, p. 244.

achieving the 40 MPG levels proposed in the amendment. Domestic manufacturers appeared sanguine that new car fleets would rival in 1985 foreign models in current production as if to suggest that the fuel efficiency of foreign cars would not improve in the interim. Von Hippel noted:

> The auto companies are unwilling to prepare to build 15 years from now cars which on average are more efficient than foreign car manufacturers are building today...[U]nless U.S. automakers aim toward a target fuel economy which is higher than the imports are getting today, they will always be playing catch-up. 14/

Von Hippel also urged for passage of a stiff gasoline tax, noting that even with oil decontrol, the price of gasoline would be a few dollars less in the United States because of the differing European philosophy about gasoline taxation. Higher prices for gasoline in Europe would continue to prod the development of more efficient cars. Von Hippel also felt that conditioned assistance to the industry "will bring much larger returns in national security per dollar invested than the...billions...committed" to synthetic fuels and military defense. 15/

Pending Issues

Neither the House nor the Senate resolved the questions of fuel economy standards beyond 1985 and the need for Federal automotive R&D. The new Administration and the 97th Congress are likely to be sensitive to the economic problems facing the automotive industry, but it seems unlikely that the new Administration would support new fuel economy standards or direct support for technology development. The same issues may be debated again in some quarters, but resolution of these issues by a deliberate course of inaction seems most probable.

14/ Hearings, *op. cit.*, p. 307.

15/ *Ibid.*, p. 308.

ENERGY MANAGEMENT PARTNERSHIP ACT*

Background

A strong impetus for a new State-Federal energy management program came from the National Governors' Task Force on Energy in 1977. The Task Force report recommended that a comprehensive Federal program, with matching Federal funding, be enacted to manage and implement overall State energy plans.

Responding to this recommendation, the Department of Energy and the Office of Management and Budget conducted a joint study that recommended consolidating Federal-State energy grant programs, and providing more flexibility to the States in the use of the grants.

There are currently five major laws concerning Federal assistance to States for conservation planning and programs: (1) Energy Policy and Conservation Act--EPCA (P.L. 94-163); (2) Energy Conservation and Production Act--ECPA (P.L. 94385); (3) National Energy Extension Service Act--EES (P.L. 95-39); (4) National Energy Conservation Policy Act--NECPA (P.L. 95-619); and (5) Emergency Energy Conservation Act--EECA (P.L. 96-102). EPCA prescribes the development of State Energy Conservation Plans, with provisions for lighting efficiency standards, promotion of carpools, energy-efficient State procurement procedures, thermal efficiency standards, and provisions for permitting "right turn on red after stop." ECPA expands these provisions of EPCA to include public education concerning all aspects of energy conservation. The Act provides for a "supplemental State Energy Conservation Plan" which may be submitted and developed regardless of whether the State has filed an approved State Energy Conservation Plan.

The 1977 National Energy Extension Service Act provides a program of identification, development, and practical demonstration of conservation opportunities. The program has two major components. The first is the establishment of a technical support institute at one or more colleges or universities within a State, Extension Service within each State. The latter requires the States to draw up plans for implementing the Service. In addition, a State Residential Energy Conservation Plan is required by the National Energy Conservation Policy Act. Finally, the Emergency Energy Conservation Act requires States to submit a State Emergency Conservation Plan.

On July 12, 1978, the Carter Administration proposed a "State Energy Management and Planning Act," to consolidate most of these programs. The Senate held a hearing on

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Sept. 14, 1978, but there was insufficient time left in the 95th session for the Congress to fully consider the bill (S. 3283).

The 96th Congress--Administration Proposal

In May 1979, the Administration introduced a revised bill called the Energy Management Partnership Act (S.1280/ H.R. 4382). The primary purpose of EMPA was to consolidate some of the programs listed above, and provide financial and technical assistance to the States. In particular, the Act would have consolidated the EPCA, ECPA, and EES programs into one "core grant program." States would use these funds to implement some Federal programs such as the Building Energy Performance Standards (BEPS) program. States could also use funds to defray administrative costs of existing State energy programs.

The unifying trunk of the consolidation would be an overall State energy plan. Such a plan would have four components: (1) descriptions of States' supply and demand situations, with forecasts of consumption patterns; (2) identification of energy sectors which have the greatest promise for energy savings; (3) an emergency energy plan, and (4) conservation and renewable resources measures. As proposed by the Administration, the legislation authorized $24 million to develop and implement this overall State energy plan.

EMPA also would have amended the Energy Policy and Conservation Act of 1975, providing for consolidated grants to the States, including some passthrough to local governments. It would have authorized $105 million each year. The States would have contributed 20 percent of the total amount. This would have meant an average grant of $2 million per State. Combining the Federal grant with the State share would have given $2.4 million under this program to the average State. A consideration in developing EMPA was a desire to increase the role of local governments. Under EMPA: (1) local governments would become direct participants in the development and implementation of the State energy plan; (2) States would share funds with local governments in accordance with their energy responsibilities; and (3) DOE grants would be made directly to local governments for innovative energy projects.

Other Proposals

The role of local governments was the major impetus of counterproposals to EMPA. The primary alternative offered in the Congress was the Community Energy Act (CEA, S. 2576), which evolved from two earlier proposals: the Local Energy Management Act (S. 1537) and the Community Efficiency Act (S. 1829). The core of the Act had three parts: (1) Community Energy Block Grants; (2) Community

Energy Project Grants; and (3) Technical Assistance Programs.

Amending HUD's Community Development Block Grant authority, the CEA would have authorized a separate grant program for energy conservation and renewable resource activities. Applicants for grants would submit a 3-year plan meeting energy needs, including: (1) commitment to maintain or increase expenditures on local energy activities; (2) projections of energy saving expected from grants; (3) enactment of local ordinances to encourage energy conservation and use of renewable resources; (4) energy improvements to public and residential buildings; (5) programs to assist the elderly and poor with energy needs; and (6) energy emergency plans. The State would have the right to review the proposal for consistency with the State energy plan. Also, public participation would be encouraged.

The second component of the local assistance packages was energy project grants. Under CEA, the Department of Energy would make grants to local, regional, and State entities for 80 percent of the purchasing, designing, and construction costs of energy conservation projects.

Finally, the grant program involved the Department of Housing and Urban Development, setting up a National Community Energy Reference Center to provide: (1) technical and informational assistance to local governments and other groups regarding conservation and renewables; and (2) establishing relationships with States and local governments and with existing technical assistance programs. Funding was set at $5 million.

The last section of CEA proposed a "State Basic Energy Program" similar to the EMPA's overall State energy plan. The primary difference between them was the addition of more mandatory requirements under CEA than under EMPA.

Senate Action

By request, Senator Henry Jackson introduced the Energy Management Partnership Act on June 5, 1979, and the bill was referred to the Committee on Energy and Natural Resources. Hearings held before the Subcommittee on Energy Conservation and Supply (July 27, 1979) and the full Committee (February 25, 1980) centered on three issues: (1) treatment of renewable resources under EMPA; (2) State flexibility in meeting goals and spending Federal money; and (3) the role of local communities in energy conservation programs. The arguments were generally between the Administration and those who wanted a stronger effort in energy conservation and renewable resources, as represented by CEA.

Under the language of EMPA, each State was required to "consider" specific programs to remove technical, economic, and institutional barriers to the use of renewable energy resources. This language was attacked by the National Governors' Association as being too rigid; the Association argued that the applicability of renewable resources varied greatly among States, and suggested that the language be changed to "may consider." 1/ This position was disputed by Senator Charles Percy, a co-sponsor of CEA, who sought to strengthen the provision regarding renewable resources. The Senator felt that the programs suggested under EMPA--promoting private sector financing of renewable resources, preventing utility rates from discriminating unfairly against use of renewable resources, and others--were such that they should be mandatory for all States. 2/

The general issue of mandatory versus voluntary provisions spilled over into other parts of the debate. EMPA proposed to make all but two of the EPCA requirements for State Energy Plans optional (the two mandatory requirements were right-turn-on-red and thermal efficiency standards for buildings). Supporters of CEA felt that all of the ECPA requirements, plus some new ones, should be made mandatory.

The Administration replied that one purpose of the bill was to provide maximum flexibility to the States, within certain guidelines, since the rigidity of previous programs had created problems. By increasing flexibility, the Administration felt that States would be better able to adapt needs to local situations.

The role of local governments was perhaps the greatest source of disagreement between proponents of EMPA and CEA . Besides coordinating activities with the Federal Government, State energy agencies must also interface with local communities. In the past, this interface has sometimes been unsatisfactory to local governments seeking a larger role in management. Harvey Ruvin, of the National Association of Counties, gave two reasons for the need for this larger role: (1) local governments are closer to the people; and (2) local governments have the regulatory tools (building codes, zoning, etc.) to implement and enforce the policy. Recognizing this position, CEA provided for a direct Federallocal connection for the processing of community block grants. Opponents argued that the

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1/ U.S. Senate. Committee on Energy and Natural Resources. Subcommittee on Energy Conservation and Supply. Energy Management Partnership Act of 1979. Hearing on S. 1280, 96th Congress, 1st session, Washington, U.S. Govt. Print. Off., 1980. Statement of Charles Guinn, National Governors' Association, p. 74. Hearing held July 27, 1979.

2/ Ibid., p. 42.

States were charged under the law with carrying out the requirements of the Federal Government, and therefore should be involved in the activities of their local communities.

In May, the Energy Committee reported out its own version of EMPA, which differed from the Administration's in two ways. First, it retained the various conservation grant programs provided for under current law, while the Administration's bill would have consolidated the Energy Extension Service and the EPCA program into a single-core program. (The Committee bill did provide for consolidated applications for funds for these programs and for new programs authorized by the bill.) Second, the Committee bill provided for a mixture of entitlement and competitive grants to be provided directly to local governments by the Secretary of Energy. This grant proposal was a modified version of that provided under CEA, which was an entitlement formula through an addition to HUD's existing program of community development block grants. However, the Committee felt that it was important that energy-related functions not be spread to other agencies, preventing coordinated management.

On July 25, 1980, EMPA came up for debate on the floor of the Senate. An amendment introduced by Senator Pete Domenici, to strengthen the role of the States by giving the grant decision-making power to the Governors, rather than DOE, and by requiring DOE grants to local governments to "pass through" State governments, was defeated, and the bill was passed by a voice vote.

House Action

EMPA, introduced in the House as H.R. 4382 by Representative Harley Staggers, by request, was referred to both the Commerce Committee and the Science and Technology Committee, and within Science and Technology to both the Energy Development and Applications Subcommittee and the Energy Research and Production Subcommittee. At hearings before the latter subcommittee, another problem for the EMPA concept was raised--one that eventually led to its defeat. Chairman Mike McCormack, of the Energy Research and Production Subcommittee, argued that legislation dealing with comprehensive energy planning at State level should include conventional energy sources as well as renewable ones. When the House received the Senate version of EMPA on July 29, the Subcommittee amended S. 1280 to include conventional sources of energy as well as conservation and renewables. 3/

3/ U.S. Congress. House. Committee on Science and Technology. Subcommittee on Energy Research and Production. Hearings on H.R. 4382. Energy Management Partnership Act (Vol. III. May 13, 1980). Washington, U.S. Govt. Print. Off., 1980. p. 7.

Mr. McCormack's position was that the legislation as it stood was not realistic in its treatment of all energy sources. "We want to be certain," he said at a hearing before his subcommittee on May 13, "that we not mislead the American people into assuming that conservation alone or conservation in combination with what is referred to as renewable energy resources can provide, or come close to providing, the energy this Nation will need in the future."

This desire to expand the scope of EMPA to include conventional sources of energy concerned the Commerce Committee, which might not have had jurisdiction over some of the added areas. To prevent these changes in EMPA, Representative Richard Ottinger, who chaired the Subcommittee on Energy Development and Application, refused to bring up the Research and Production Subcommittee's version of the bill in his committee.

On August 19, Representative Staggers introduced a revision of EMPA to the House--H.R. 7945. The bill was rereferred to the Committee on Interstate and Foreign Commerce, and from there went to the Subcommittee on Energy and Power. Based on the hearings held for H.R. 4382, the "Community and State Energy Assistance Planning Act of 1980," consisted of three parts. Title I provided for community planning assistance to local communities to help in local energy conservation planning and in implementing local energy conservation plans. Title II provided for consolidated applications for financial assistance for State energy programs. Finally, Title III established a grant program for assisting States in developing and administering long-range energy plans.

With both H.R. 7945 and S. 1280 before it, the Energy and Power Subcommittee, on August 20 and 22, held markup on H.R. 7945, amending and reporting that bill to the full committee, which held markup August 28. Subsequently passed by voice vote, the bill was referred to the House and put on the Union Calendar for September 5, 1980. On the same day, the Commerce Committee substituted the language of H.R. 7945 for S. 1280 and subsequently reported it to the House.

Attempts by the Energy Research and Production Subcommittee to alter S. 1280 came to a head during the Rules Committee deliberations on the bill. Before the Rules Committee, the Subcommittee requested a special rule to permit them to offer an amendment to S. 1280 which would have added nuclear, natural gas, and other conventional and exotic sources of energy to the bill. Opponents of the amendment argued that such supply alternatives were not germane to a conservation-oriented bill. The amendment was not allowed, but the Rules Committee did pass an open rule with 1 hour debate for S. 1280, with the waiver of some points of order. However, EMPA received no further consideration until the post-election session of late

November and early December. On December 1, 1980, the Commerce Committee brought up S. 1280 under the Suspension Calendar, a procedure that prevented introduction of amendments to the bill. Controversy over inclusion of conventional energy sources in the bill, combined with the procedure blocking amendments, led to its defeat, by a vote of 164 to 192.

Issues Pending for the 97th Congress

Scope of the Federal-State Relationship. Energy policy making is a complex situation in the United States, involving overlapping levels of government. This overlap differs in composition according to the particular function or fuel being analyzed. Policy making, information collection, analysis and distribution, enforcement of regulations and emergency allocations, and disaster management, are distributed or shared among Federal, State or local authorities, and this distribution is different for coal, oil, natural gas, electricity, nuclear power, and conservation.

As originally introduced, EMPA dealt primarily with conservation, traditionally a State and local concern. However, attempts to expand this scope to include other energy sources raised several questions: Do States have the informational or analytical capability to consider all energy resources? Is the State/local governmental level the appropriate level to consider some energy alternatives, such as nuclear power? How would such plans be coordinated with Federal legislation, such as the Natural Gas Policy Act, the Clean Air Act, or the Coastal Zone Management Act? What if comprehensive State plans conflict with national energy goals?

Flexibility in the State-Federal Relationship. As originally introduced, EMPA attempted to reduce the number of Federal measures States had to implement. This attempt was attacked, particularly in the Senate, as a step backwards for energy conservation. However, in the House, some argued that Federal control over programs was too strong; a "revenue sharing" approach to energy conservation grants was suggested. How strong should the guidelines be for energy grants to the States? How much flexibility should be provided to the States in carrying out the will of Congress?

State-Local Relationship in Energy Policy. During the EMPA debate, considerable attention was given to the State-local interface regarding energy programs. Proponents of a strong State role in the relationship argued that since the Federal Government places the responsibility for implementing Federal goals on the States, they should coordinate the activities of their local communities. Advocates of direct Federal-local relationship argued that local communities actually implement most energy conservation measures, and therefore should have a direct access to the sources of funds--the Federal Government. What is the proper role of local communities in formulating and implementing energy policy? Should responsibility, currently placed on the State, be transferred to local communities? Should the local communities have a direct link to the Federal Government, or should the States be pivotal players in energy policy?

These are some of the questions which the EMPA debate exposed but did not resolve in the 96th Congress. With a new administration suggesting major reforms of the energy policy-making structure, these questions will be pivotal in the coming debate in the 97th Congress.

CHAPTER VII: ORGANIZATIONAL POLICY

DEPARTMENT OF ENERGY ORGANIZATION AND MANAGEMENT*

Background

The establishment of the Department of Energy in 1977 was the culmination of a series of reorganizations of Federal energy functions that began in 1973 during the crisis precipitated by the Arab oil embargo. It brought together the Federal Energy Administration, created by the Congress in 1974, the Energy Research and Development Administration, also created in 1974 out of the old Atomic Energy Commission, and several offices from other Federal agencies. The independent Federal Power Commission was also brought into DOE as a semi-independent unit, the Federal Energy Regulatory Commission. There was an expectation was that the consolidation of all major energy functions in the DOE would contribute the crucial ingredient to the resolution of U.S. energy problems. However, in the three years following its creation, these energy problems continued to prove hard to manage, and the Energy Department received a large measure of the blame for failures in energy policy. By the end of the 96th Congress, energy reorganization was again a subject of discussion, with attention focusing largely on dismantling or cutting back Department of Energy functions.

It is therefore likely that in the 97th Congress, both the Executive Branch and the Congress will actively consider the continuing reorganization of energy functions. This Chapter summarizes the problems which have plagued DOE in the three years of its existence, together with the options for reorganization suggested in the 96th Congress, which may arise in the coming Congress.

Over the past three years, two general categories of problems have been under scrutiny by the committees of Congress with oversight responsibilities: (1) general management and administrative problems, and (2) issues related to specific policy and functional areas, such as energy information, regulation, and many others. Several of the issues in this latter category had been debated at length when the Department was being established.

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General Management and Administrative Problems

When DOE was established, it brought together a large number of diverse functions and staffs, some with long histories and well-established functions, other relatively recent and operating in a mode of response to emergencies of the day. Moreover, personnel were scattered in physical locations throughout the metropolitan Washington area, far out into distant suburbs. The initial adjustment and organization phase for DOE was difficult and lengthy for these reasons, and also because the Department faced the difficult continuing task of formulation and shepherding through Congress a comprehensive energy policy for a new President. These difficulties in themselves were a challenge to the new Department. In additon, DOE inherited and then continued to have problems in three major management and administrative areas which permeated and hindered purposeful, direct action in all of the Department's functional areas. These were in (1) policy and planning, (2) staff turnover, and (3) over-reliance on contracting.

Policy and planning. In addition to facing the questions involved in formulating an overall national energy policy, the Department largely failed to develop individual policies to guide planning in specific functional areas. Poor communication among the different components of the Department exacerbated the problem; when actions were undertaken in one area, impacts or needed actions in other areas were not communicated and not considered. In oversight hearings before the Senate Governmental Affairs Committee, Comptroller General Elmer Staats identified several areas in which these problems hindered effective action: establishing program priorities for allocation of resources among fossil energy technologies, evaluation of when a technological process can advance to the next phase of development, and general problems with the conservation program and solar heating commercialization. 1/

Similar problems with overall planning and in setting priorities plagued the Energy Information Administration, Staats testified. Progress toward better planning and policy-setting for components within EIA could be observed, he said, but the absence of clear articulation of the department's goals and program priorities had hindered its effective functioning.

(2) Staff turnover. The rapid turnover of staff at all levels has been a continuing problem throughout the Energy Department. When vacancies occur at upper manage-

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1/ U.S. Senate. Committee on Governmental Affairs. Hearings Oversight of the Structure and Management of the Department of Energy. Part 1. p. 25. U.S. Govt. Print. Off., Washington, D.C. July and October 1979.

ment levels, planning and policy actions slow down or cease until the position is filled; institutional memory is lacking, and inefficiencies abound in covering ground that had been covered by a predecessor; interactions with other agencies and organizations are interrupted and hindered.

A serious problem in staffing turnover and vacancies was identified in the Energy Information Administration in a 1979 report by the Professional Audit Review Team (PART), which stated, ..." the slow progress in...data validation, data dissemination, and improved computer model credibility--may be attributable to the lack of continuity of upper level management. Many problems might have been anticipated and prevented or at least resolved in a shorter timeframe if EIA had less management turnover." 2/

In March of 1980, the situation had not improved at EIA, as indicated by the roster of personnel at the Office Director level and above for that agency: thirty-five percent of the positions at levels of office director or above were vacant or administered by acting officials for at least a portion of 1980.

Contracting. Approximately $8.5 billion in fiscal year 1978, out of DOE's $12 billion budget, was spent on contracts. This pattern has continued, with well over 70 percent of DOE's activities carried out by outside contractors instead of by in-house personnel. In many cases, the lack of personnel caused by vacancies and turnover led to contracting; in other cases, personnel levels were too low to carry out an agency's programs, even if all positions were filled. However, hearings in a number of program areas during the 96th Congress have evidenced concern by DOE management over this very high proportion of DOE's budget going to outside contractors.

In some cases, including the Economic Regulatory Administration and the Energy Information Administration, even the formulation of agency goals and strategies were sometimes contracted out.

In fiscal year 1982, in current level funding, over 66 percent of the Energy Information Administration's budget would have gone to contractors under the Carter-prepared proposals. This had led to serious attempts by EIA management to plan methods of reducing contracting levels. A plan recently formulated within EIA calls for a total of 317 positions to be added to the current 880 positions in EIA. In FY 81, the Agency was given some 65 new positions and the House authorization report reiterated its previously expressed concern over the high level

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2/ PART is established in the Department of Energy Organization Act, and consists of an interagency team charged with annually evaluating the performance of EIA.

of contracting in EIA, and voiced concerns which apply to contracting by any agency:

> The widespread use of outside contracting inhibits the acquisition of expertise and understanding which accompanies the "hand on" development and implementation of programs. Also, the program accountability shifts from being solely that of EIA to that of the contractor. However, in many cases contracting, particularly one-time contracting is a very valuable way to perform program functions. 3/

Specific Program Areas

Policy and management problems have been apparent in nearly all of the program areas of the Department of Energy. Some of these problems have roots in the debates which occurred when DOE was established. Some selected problem areas are discussed below.

Energy Information. When the Department of Energy was established, one of the primary goals of Congress was to create an independent, objective source of credible data and information on energy. Problems with the objectivity and usefulness of the data produced by one of its predecessor agencies, the Federal Energy Administration (FEA), had led Congress to take steps to remove the information function in DOE from the policy formulation function. A separate Energy Information Administration (EIA) was established, with a position in the Department that was free from review by any other entity in DOE. It was expected that EIA would provide the numbers, data, and information that the Department would use as a basis for policies. However, in the past three years, dissatisfaction with the reliability and timeliness of information disseminated by the Department, particularly in the context of debate on legislative proposals, has been widely voiced. Inquiries into shortcomings of the data used and promulgated by DOE has revealed that often, EIA had not provided them, nor had it reviewed such figures. The reason for this was apparently that EIA, in preserving its objectivity and separation from the policy process, had instituted lengthy and involved review procedures which generally resulted in slow responses to requests for data. In addition, EIA's high standards for accuracy led to some refusals to do

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3/ U.S. House of Representatives. Committee on Interstate and Foreign Commerce. Department of Energy Civilian Programs 1981 Authorization Act. House Report 96-967, Part 1. May 15, 1980. p. 38.

certain types of analyses if sufficient lead time was not provided. Unfortunately, most information needed as a basis for policy decisions must meet fast turn-around needs. EIA had effectively shut itself out of the policy loop, and was not as widely used by the Department as had been intended by the law that established it.

There is, however, an important distinction between data and analysis. In designing data collection systems, and dissemination of regular reports on basic data on energy, fuels and availability, EIA has made important strides in responding to requests and making data available in a timely fashion. Increasingly, decision-makers are learning that such data are available and how to use it. However, in the analysis of the data--projections into the future, estimating impacts of various policy actions, forecasts of supply and demand, and other interpretations--EIA has been faulted for not providing information needed in the policy process. In hearings on the agency, great dissatisfaction was voiced with the failure of EIA to provide the basic analysis for the policy operations both in DOE and in Congress. However, discussion of the issue has clarified some of the difficulties in doing "objective" analysis, and the extent to which value judgements and assumption must be chosen before an analysis can be performed. In addition, the agency has suffered from the difficulties in turnover and contracting which greatly hinders effective analysis and the development of on-going programs, interactions with policy-oriented staff which allow the building of a trusting relationship and consequent productive interactions.

Disposition of DOE's Nuclear Weapons Functions. Two assistant secretaries in DOE administer seven programs for Atomic Energy Defense Activities. These defense related activities account for 35 percent of DOE's obligational authority in the FY 1981 budget. Five major programs under the Assistant Secretary for Defense Programs account for 80 percent of DOE's weapons and defense activities.

The question of whether it is appropriate to house within the same agency two such important but unrelated activities as (1) weapons development and (2) civilian energy research and regulation has been a question ever since 1974 when the Atomic Energy Commission was abolished and its research and development functions--both nuclear energy production and nuclear weapons development--were transferred to the Energy research and Development Administration. At that time, the transfer of the weapons development program to the Department of Defense or some other location other than the energy research and development agency, which now focused broadly on both nuclear and non-nuclear energy R & D, was suggested as an option.

At the conclusion of this debate, a somewhat uneasy compromise was reached in which weapons development was transferred to ERDA. When the Department of Energy was established, the issue of disposition of the weapons functions received only cursory notice. ERDA, complete with all its defense-related functions, was transferred to the DOE. Following the recommendation of ERDA's administrator in 1976, this decisions was reviewed by the General Accounting Office during the 96th Congress as to the possible need for updating it. On May 9, 1980, the Director, Procurement and Systems Acquisition Division of GAO, stated in a Memorandum to the Comptroller General on the Transfer of Nuclear Weapons from the Department of Energy, "...there does not appear to be any firm advantages which would accrue to DOE or the weapons program if a transfer was made."

Although the issue has remained largely settled for the past four years, and no strong interest in bringing it up again surfaced when the DOE was established, the anomaly of the combination of these two very large and unrelated important national missions, in a Department devoted primarily to one of the two functions, continues to be of concern when organizational or reorganization issues are discussed.

Environment functions at DOE. Despite a clear mandate in the Department of Energy Organization Act to include environmental protection goals among the Department's key priorities, DOE has been faulted by some observers for relegating environmental concerns to a low level of attention and activity.

Specifically, the DOE Act states among the Department's purposes: "to assure incorporation of national environmental protection goals in the formulation and implementation of energy programs, and to advance the goals of restoring, protecting and enhancing environmental quality, and assuring public health and safety." 4/ In addition, the Act specifies that one of the Department's eight assistant secretaries should be assigned: "environmental responsibilities and functions including advising the Secretary with respect to conformance of the Department's activities to environmental protection laws and principles, and conducting a comprehensive program of research and development on the environmental effects of energy technology and programs. 5/

4/ P.L. 95-91, Sec. 102(13).

5/ Ibid., Sec. 203(a)(3)

However, the intent of these sections of the DOE Act has not been carried out, according to reports of the GAO and EPA, and witnesses in the hearing of the Senate Committee on Government Affairs.

In a January, 1980, report, entitled "The Energy Department's Office of Environment Does Not Have a Large Role in Decision-Making," 6/ the GAO found that environmental concerns were largely neglected and rarely incorporated into decisions on alternative programs or embarking on new projects. In large part, GAO found, this was not through lack of willingness on the part of the Environment officials at DOE, but rather through lack of interest and lack of procedures in the program offices with respect to incorporating environmental concerns and information into the decision process. In addition, the lack of effective comprehensive and coordinated planning and decision-making procedures affects these program management with respect to their general effectiveness, as well.

A January, 1980, report by the Environmental Protection Agency also found that DOE's policy and management decisions do not systematically, if at all, reflect environmental concerns. In its findings, the report stated: "It is unclear what formal environmental criteria, if any, DOE uses as a basis for its policy and project management decissions". It recommended: "DOE should develop explicit environmental criteria for use in formulating energy policy and evaluating technology development, and submit those criteria for public and peer review." 7/

Energy production is one of the key areas in which conflicts over environmental requirements and concerns has occurred. When DOE was established, the farmers of that legislation debated whether it would be more effective to have an environmental officer in each key program area, in order to have these concerns introduced into the decision making process, or whether to provide an independent base operations to the environmental officer. It was decided that an Assistant Secretary reporting directly to the Secretary would be more likely to be effective as the voice of environmental concerns. However, experience has

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6/ U.S. General Accounting Office. Report to the Chairman, Committee on Governmental Affairs, United States Senate. The Energy Department's Office of Environment does not have a large role in decision-making. January 29, 1980. EMD-80-5-. Washington, D.C. 32 pp.

7/ U.S. Environmental Protection Agency. Office of Research and Development. Environmental Evaluation. Report to the President and Congress [pursuant to] The Federal Nonnuclear Energy Research and Development Act (Public Law 93-577), Section 11. p. 18-19.

shown that efforts to insert environmental quality as a key concern in energy production decisions often lead to an adversarial relationship. Thus it is unlikely that advocates of environmental concerns in energy decision making will find this area of conflict resolved in the near future.

Other problem areas. The foregoing discussion demonstrates the kinds of problems which have had impacts in many other program and policy areas. Most of these are areas in which substantive debate is likely to continued. Some of the issues involved are organizational, but others related only marginally if at all to organization of the Department's functions. However, all of these problem areas have added up to a public impression of trouble at DOE, and have contributed to the movement to disband or further reorganize the Department. Among the areas also under scrutiny during the 96th Congress and likely to continue to be are the following:

Conservation and Solar. The programs for energy conservation and for solar energy were reorganized by Secretary of Energy Charles Duncan when he took over from former Secretary James Schlesinger. The result was to consolidate these functions under a single assistant secretary (bringing together the commercialization programs with the R & D and grants programs). However, achievement of efficient action in these areas was greatly hindered by the problems listed in discussion above--high staff turnover, poor management planning, inadequate personnel levels, inefficient procurement procedures, and the turmoil engendered by the reorganization itself.

Energy regulation. A basic organizational question was raised by the DOE Act, which specified in considerable detail the responsibilities of the semi-autonomous Federal Energy Regulatory Commission, but left largely unstated the functions of the Economic Regulatory Administration. The two agencies have divided regulatory responsibilities, largely eliminating duplication or excessive competition between them as an issue. Nevertheless, dissatisfaction with DOE's programs has often focused on its regulatory role. Such dissatisfaction is largely over substantive and procedural matters, and does not reflect major organizational or management issues. However, in light of the decontrol of prices, questions about the organization of remaining regulaory functions and their most appropriate organization will arise.

Energy Emergency Planning. Within the ERA, emergency energy rationing plans were developed during the 96th Congress, but were widely faulted for being too cumbersome, and far too slow in implementation. Objections from many interest groups were voiced with respect to energy allocation plans prepared for use in an emergency, also. In general, DOE was faulted with inefficient planning in this area, regarded by many observers as one of its most critical responsibilities.

Legislative Proposals to Disband the Department of Energy.

During the Presidential campaign, President Carter rarely referred with his earlier pride to the Department of Energy as one of his accomplishments. President Reagan during the campaign frequently voiced his determination to abolish the Department. Accompanying this rising tide of sentiment against the existence of the DOE, were several bills introduced in the 96th Congress. These bills would either have simply abolished the Department, or would have terminated it in 1982, unless Congress had acted in the meantime to declare its intentions, or the functions of the Department would be transferred according to a plan submitted by the President, subject to Congress' approval.

Among these bills were S. 1563 (Durkin), H.R. 4329, (Whitehurst), H.R. 4617 (Mr. Hollenbeck), and H.R. 5090 (Kramer). There was no action on these bills.

THE ENERGY MOBILIZATION BOARD*

Background

The Energy Mobilization Board (EMB) was one of the major facets of President Carter's energy legislation package for the 96th Congress. The other two major efforts--the Energy Security Act and the Windfall Profits Tax--were enacted (See Chapter II). But the EMB, which was proposed in response to broad support for streamlined licensing and permitting procedures for major energy projects, failed to pass.

Recognition that licensing and review of major energy projects needed expediting was not new. Beginning in the 93rd Congress special legislation had been enacted for this purpose. For example, the Trans-Alaska Oil Pipeline Authorization Act (Public Law 93-153), the Alaska Natural Gas Transportation Act (Public Law 93-586), and the National Crude Oil Supply and Transportation Act (Title V of Public Law 93-617) also provide for expeditious considerations of specific projects. The concept of a formal expediting system for a large number of unspecified projects, however, was new.

In April 1979, President Carter expressed the need to increase supplies of energy and signed Executive Order 12129. Known as the "Critical Energy Facility Program," it was to give the Office of Management and Budget a new coordination role to cut through "Federal red tape on important new energy projects, such as pipelines, seaports, and refineries." In his July 15 energy message to the Nation the President proposed a number of measures to cut oil imports. One measure was the creation of an Energy Security Corporation, to stimulate production of alternate energy supplies. The President said: "To make absolutely certain that nothing stands in the way of achieving these goals, I will urge Congress to create an Energy Mobilization Board which, like the War Production Board in World War II, will have the responsibility and authority to cut through red tape, the delays, and the endless roadblocks to completing key energy projects."

Congress also took up the concept, soon to be called "fast track" legislation. In April, the Interstate and Foreign Commerce's Subcommittee on Energy and Power held oversight hearings on Executive Order 12129. The House Committee on Interior and Insular Affairs held hearings on an early version of EMB legislation, H.R. 4573, favorable reporting it on July 27.

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Other "fast track" legislation was introduced during the next four months to provide for expeditious governmental consideration and review of new critical nonnuclear energy. Bills introduced included S. 1308 (Jackson), H.R. 4499 (Dingell), S. 1377 (Domenici), H.R. 4573 (Udall), S. 1415 and S. 1416 (Bentsen), S. 1513 (Boren), H.R. 4791 (Staggers), H.R. 4862 (Dingell), H.R. 4985 (Udall), S. 1806 (Ribicoff). The plethora of bills reflected the intensity of interest in the subject and variety of ideas and approaches being considered. Ultimately, after extensive consideration, two versions developed as embodied in H.R. 4985 and S. 1308.

These bills were similar in basic structure. Both established an Energy Mobilization Board to accept and act on applications by sponsors of energy projects for priority status. For projects granted priority status, a Project Decision Schedule could be established to expedite licensing, permitting, and other decisions impacting upon siting and construction. Each bill had a procedure for enforcing the Project Decision Schedule. Each modified the National Environmental Policy Act (NEPA) process and each restricted judicial review.

There were, of course, significant differences between the two bills, particularly in the area of preemption of State and local authority and waivers of substantive law. S. 1308 was passed by the Senate on October 4, 1979, by a vote of 68-25, while H.R. 4985 was approved by the House, 299-107 on November 1, 1979. The Conference committee struggled for seven months to resolve the differences between the two bills. Although the conferees finally managed to reach a compromise, the issues remained so difficult that the House voted it down, and the bill died.

Conference Committee Bill

The key parts of the legislation as it was approved by the Conference Committee are summarized below.

Composition of the Board. The Energy Mobilization Board would have had three members appointed for two-year staggered terms by the President, subject to Senate approval. The Chairman, named by the President, would have had management authority for all negotiations.

Governors could have appointed nonvoting representatives to participate with the Board, but only in matters relating to a specific project.

Designation of Priority Projects/Project Decision Schedules. The Administrative Procedure Act was to apply to the Board, but most actions of the Board, including designations of priority projects and establishment of Project Decision Schedules, were to be by informal order (for which the APA does not require specific procedures). The Board would designate priority energy projects after considering 12 factors set out in the bill, including economic costs, impact of project on reducing imports and environmental impacts. Upon application, projects to convert powerplants fueled by oil and natural gas to coal-derived fuels would automatically have been given priority status. Nuclear powerplant licenses were specifically excluded from EMB action.

The Board would have had authority to establish Project Decision Schedules (PDS's) containing deadlines for Federal, State, and local agency decisions involving priority energy projects. To the maximum extent practicable, deadlines would require decisions by the agencies within one year after an application was made. Establishment of the PDS, and modifications of it, would not have been subject to judicial review.

National Environmental Policy Act and Comparable State Laws. The Council on Environmental Quality was to decide if an environmental impact statement was necessary and was to appoint the lead agency. However, if CEQ failed to act within the time specified, the Board would act in its place.

The Board could determine that a single EIS should be prepared and used by all Federal agencies with jurisdiction over the priority energy project. It could also require that the federally-prepared EIS substitute for any comparable State or local requirement provided that the EIS covered all matters that must be covered under the State or local law. Such an action could not be taken, however, unless the lead agency had been unable to negotiate an agreement for voluntary cooperation with the State or local agency.

Enforcement-Court Orders/Bump Up. If any Federal, State or local agency failed or was likely to fail to comply with any deadline on the Project Decision Schedule, the Board would have been authorized to bring an enforcement action in the appropriate United States District Court. Appeals to enforcement actions by the Court would be directed to a Temporary Emergency Court of Appeals (TECA). The District Court could issue orders necessary to enforce the deadlines.

In addition to court action, the Board could deal with missed deadlines itself: It could make the decisions or perform the action in lieu of the agency. (This is the so-called "bump-up" provision.) The Board's final decision would have to be consistent with all applicable Federal, State or local laws.

The affected agency could challenge the Board's bump-up order, but only within 10 days after the Board decided to use its bump-up authority. The challenge would have to be brought in TECA and could be based only on the ground that the Board did not give the agency a reasonable time to comply with applicable laws.

Streamlined Procedures. Federal, State and local agencies would have been authorized to adopt streamlined procedurs for making decisions on priority energy projects. These procedures would allow the agencies to: (a) shorten time periods required by other laws, (b) substitute informal or "hybrid" hearings for formal, trial-type hearings, (c) eliminate unnecessary duplication, and (d) consolidate proceedings with other agencies. The Board would have been authorized to require Federal agencies (except independent Federal agencies such as the Federal Energy Regulatory Commission and the Interstate Commerce Commission) to adopt streamlined procedures for priority energy projects.

Grandfather Authority. The Board could have suspended the application of any Federal, State or local law (with specified exceptions) as it applied to a priority energy project, if the law was enacted after the project applied for designation as a priority project or after the project commenced construction (whichever was earlier), but before commencement of initial commercial operation. The law to be suspended would have to present a substantial impediment to the project, and suspension could not be expected to result in substantial harm to public health or safety.

Judicial review of grandfather orders would have been limited to: (a) whether the law suspended was enacted within the time period allowed for the option, (b) whether the order would result in substantial harm to health or safety, and (c) whether the order applied to laws which are exempt from the Board's grandfather authority (criminal laws, civil rights laws, and others).

Expedited Congressional Procedures. The Board was to be able to recommend the suspension, modification or amendment of any Federal law (with specified exemptions) which presented a substantial impediment to the completion of a priority energy project. In recommending such an action, the Board had to make the same types of findings and impose the same types of terms and conditions as required for grandfather orders.

The President would then either reject the Board's recommendations, or recommend them to Congress for approval. The President's recommendations would take effect if they were approved by both Houses of Congress within 60 days. Under special expedited procedures, the recommendations could not be amended, nor filibustered in the Senate. The special procedures guaranteed a vote by the full House and Senate within 60 days unless a majority of the members of the Committee with jurisdiction over the recommendations voted against reporting a resolution of approval.

The President could not recommend the suspension, modification or amendment of Federal laws for more than 12 priority energy projects in any Congress. Judicial review of the Board's recommendations to the President and the President's recommendations to Congress would be limited to consideration of whether they involved laws specifically exempt from the special congressional review process (civil rights, criminal laws, and others).

Judicial Review. The Temporary Emergency Court of Appeals (TECA) was to have original and exclusive jurisdiction to review all Federal, State and local agency actions and decisions covered by the Project Decision Schedule, and over actions and decisions by the Board. Actions for review in TECA were to be brought only within 30 days from the date of the agency action or decision being challenged.

Expedited Permits. Decisions on permits to drill on Federal oil and gas leases would have to be made within 90 days application unless more time was needed to comply with applicable law.

Exploration permits, development leases, or approval of mine plans on onshore Federal land for the production of coal, oil or gas were also to be expedited. If an application was not acted on within 12 months, the relevant agency would have to explain why not; the applicant could then go to the appropriate Federal District Court, which could require the agency to complete its actions on the application within a reasonable time and issue a decision.

Final Action on EMB Legislation

On June 27, 1980, the House rejected the Conference Committee report, voting 232-121 to recommit the bill to the Conference Committee. The major causes for rejection appeared to be concern over States' rights, opposition from environmentalists to waiver of substantive environment regulation and law, and a perception that the EMB would be yet another layer of bureaucracy and source of red tape. It was also feared that the EMB legislation might backfire by providing those intent upon delay of major energy projects with another set of legal issues.

These fears, probably combined with a reluctance by members of the Republican party to support a key element in the President's energy programs in an election year, acted to defeat the measure.

Issues and Pending Actions

The question of delays in licensing energy projects remained unanswered with the failure of the EMB legislation. The difficulty in finding a consensus in the 96th Congress made it likely that a different approach would be taken in meeting the problem in the future. Nevertheless, the points of debate remained relevant to any future attempt at resolving the issue.

The points which developed during the Congressional debate on EMB generally fell into four broad categories: (1) preemption of State and local authority; (2) the degree to which judicial review would be permitted; (3) deadline for decision-making and (4) the definition of critical energy facilities, the criteria used for their selection, and the number of projects to be allowed. The first two were predominant and deserve further elaboration.

Preemption of State and Local Authority. Preemption in the context of fast track legislation generally referred to provisions which would have allowed the Energy Mobilization Board to override State and local regulations regarding permitting and licensing of critical energy facilities. The major issue in this regard was whether preemption would apply to only procedural matters or if substantive laws and regulations also were to be included.

The type of Federal preemption contained in the EMB proposals raised questions of both efficacy and constitutionality. It was argued that such preemption of State and local law was unconstitutional in that it could impair essential State governmental functions and adversely affect their ability to function effectively in a Federal system. The Justice Department, however, while acknowledging that the proposal presented "novel questions to constitutional law for which there is no direct precedent either in judicial decisions or historical experience," concluded that Federal override of State procedural laws was constitutional. It distinguished between procedural laws and substantive standards, the waiver of only the latter being viewed as threatening "the provision of traditional State and local service."

The usefulness of preempting only State and local procedural law was questioned. The Administration argued that critically needed energy facilities could be built "consistent with our environmental objectives and with respect for State and local substantive prerogatives" but not if "...procedural barriers are allowed to persist." In a paper issued on July 21, 1979, the White House stated that the problem of delay was "often as serious at the State and local level as... at the Federal level" and, after citing several examples, stated that an energy mobilization board would be useless if it had no authority at all over State and local approvals. 1/ Others argued that waiving procedural requirements would do little to alter the outcome or shorten the process. This argument rested on a belief that the primary sources of delay were in substantive requirements such as data gathering, obtaining emission offsets, demonstrating that water quality standards would not be violated, and the like. As long as these requirements were in effect, all the time and effort necessary to meet them would still have to be expended, with or without EMB. In fact, some argued, the situation would be worse, since there would be yet another layer of bureaucracy to deal with.

Judicial Review. Restriction of judicial review was, the Carter Administration believed, a necessary element in the fast track legislation. In the July 21 paper, the White House named "repetitive and delaying judicial review" as a fundamental problem in the regulation process.

Proponents of stringent limitations to judicial review cited cases of protracted "dilatory" litigation or the threat of litigation, often over energy projects. They claimed that such litigation for "dilatory purposes" had become a major weapon for those who believed in a "no-growth" economy.

It was hoped that carefully shaped legislation could eliminate litigation which was intended simply to delay projects, while permitting litigation which raised legitimate issues--and to do all of this in a timely fashion.

While many agreed that there was need for some time limitation on challenges to agency action, the degree to which the scope of review was limited in the proposed legislation raised some concern. For example, if designations of critical projects or the granting of permits to a project by the Energy Mobilization Board were not to be reviewable or were reviewable only on constitutional or statutory grounds, it was possible that ill-considered decisions might result. Such review was considered by some to be necessary to ensure that the Energy Mobilization Board used the adopted criteria for selecting a project or followed procedures under the Administrative Procedure Act, for example. Others believed that review was necessary to permit re-examination or modification of a faulty decision while it was still economically and technically feasible to do so.

1/ U.S. White House. Domestic Policy Staff. Memorandum on specifications of an operation of an Energy Mobilization Board. [July 21, 1979].

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